Laws of Sanctification of the New Month, Chapter 6 (Auto Translated)

English

Auto Translated

Shiur Overview

Summary of Hilchos Kiddush HaChodesh Chapter 6 (with Introduction from Chapter 5)

Introduction: The Dispute Between the Rambam and Ramban Regarding Kiddush HaChodesh in Our Time (Review from Chapter 5)

The Rambam's Position: A central Beis Din in Eretz Yisrael can be mekadesh the month al pi cheshbon (by calculation), even without semicha (ordination), because the essential requirement is that there be a central Beis Din, not the technical din of semicha.

The Ramban's Position: The Beis Din of old (which had semicha) already made kiddush hachodesh for all future months.

Explanation: Both need to answer how we can be mekadesh months bizman hazeh (in our time) when there is no Beis Din with semicha.

Insights and Explanations:

1) The Two Arguments of the Ramban Against the Rambam: (a) How can the Beis Din of Eretz Yisrael today be mekadesh the month — they don't have semicha? (b) From where does the Rambam derive his halacha l'Moshe miSinai that one can be mekadesh al pi cheshbon when there is no Beis Din with semicha?

2) Kula and Chumra of the Ramban: On one hand — the Ramban holds one doesn't specifically need a Beis Din HaGadol (a leniency), but on the other hand — one does need semicha, which doesn't exist today (a stringency).

3) The Rambam's Position — A Central Beis Din is the Essential Requirement: The Rambam looks at it oppositely: the essential requirement is that there be one central Beis Din, not the technical din of semicha. A central Beis Din even without semicha, even bizman hazeh, can do everything — even make semicha itself (as the Rambam writes in Hilchos Sanhedrin that Jews in Eretz Yisrael can make semicha today). But without a central Beis Din, one can do nothing.

4) The Deeper Distinction: The Ramban starts from an ideal of how things should be (semicha, etc.), and therefore has a problem with reality. The Rambam starts from reality — whoever exists in that generation, that is the "chacham shebimecha," according to the verse "el hakohen asher yihiyeh bayamim hahem." Even if he is not a great chacham — that is sufficient.

5) Connection to the Rambam's Position on Rabbinic Authority: This fits with the Rambam's general view that rabbinic takanos must be followed because they have haskamas klal Yisrael — there don't need to be specific qualifications, only that this is the best of klal Yisrael in that generation.

Introduction to Chapter 6: The Rambam's Method of Clarity

Insights:

1) The Rambam in Moreh Nevuchim Regarding Astronomy: The Rambam wrote to his student R' Yosef that when he taught him astronomy, he intentionally didn't mention the difficulties with the system, in order not to confuse the student. Only later in Moreh Nevuchim does he list the difficulties. The Rambam didn't naively reproduce the science of his time — he knew there were many difficulties.

2) Regarding Kiddush HaChodesh, the Science Has Barely Improved — perhaps half a second more accurate, but not really better.

3) The Rambam's Pedagogical Method — Min HaKal El HaKaved: Chapter 6 is intentionally not one hundred percent accurate, but it is useful for what follows. The Rambam makes simple things clear, one thing at a time, without mixing in "advanced" matters. Commentators sometimes complicate what the Rambam made simple.

Halacha 1: The Calculation of the Conjunction of the Moon with the Sun

The Rambam's Words: "Bizman she'osin al hare'iyah, hayu mechashvin v'yod'in sha'ah sheyiskabetz bah hayare'ach im hachama b'dikduk harbeh... kedei leidah im yeira'eh hayare'ach im lo yeira'eh."

Explanation: When they were mekadesh the month al pi re'iyah (by sighting), the chachmei Beis Din calculated the precise time when the levana and sun are "niskabetz" (conjunction) — i.e., when the sun shines exactly on the other side of the levana, and one can see nothing of it. From there they knew that after a bit of time one would be able to see the new levana.

Insights and Explanations:

1) Kibbutz (Molad) and Re'iyah are Two Separate Things: The re'iyah always comes after the kibbutz, with a certain time in between, which depends on various factors (time, place, other calculations that will come later).

2) The Lubavitcher Rebbe's Chakira — When Does the Month Begin? The Lubavitcher Rebbe investigated: does the month begin when one cannot see the levana (kibbutz/molad), or when one can see the new levana (re'iyah)? It turns out to be a "chakira b'alma" — like the chakira whether the roof holds up the people or the people lie on the roof — it's a question of what we call the beginning.

3) L'ma'aseh: We Calculate the Month from the Re'iyah, Not from the Molad. The molad itself "does nothing" in making the month — it only helps as a calculation tool. They didn't establish the month according to kibbutz, even though the kibbutz is much clearer/more precise than the re'iyah. They didn't want that — one needs something that can be seen.

Halacha 1 (Continued): The Distinction Between Kibbutz and Molad, and the Mahalach HaEmtza'i

The Rambam's Words: "She'as kibbutzam belo dikduk... b'mahalcham ha'emtza'i... hu hanikra molad."

Explanation: There are two levels of calculation: (1) **Cheshbon Meduyekes Keriva** — a precise calculation when guf hashemesh and guf halevana stand exactly opposite each other, and (2) **Cheshbon Bekiruv** — an approximate calculation without much precision. The approximate calculation is based on the **mahalach ha'emtza'i** (the average movement), and this is what is called **molad**.

Insights and Explanations:

1) Kibbutz vs. Molad — A Terminological Distinction by the Rambam: The Rambam makes a clear distinction: **Kibbutz** means the precise moment when sun and levana stand exactly together (conjunction), and **molad** means the approximate calculation based on the average. The distinction is not universally accepted — not all Rishonim use the words this way. But what we call "molad" (what is announced in shul) is what the Rambam calls molad — the approximate calculation.

2) Why the Cheshbon Bekiruv is the Foundation Even for the Cheshbon HaMeduyak: Even in the times of Beis Din, when they needed to know precisely when one could see the levana, they **started** from the cheshbon bekiruv. The path to the precise calculation goes through two stages: first one calculates the approximation (mahalach ha'emtza'i), and then one adds or subtracts a **tikun/hosafa** in order to arrive at the precise result. This is compared to how one calculates 247: first 200, then 40, then 7. Therefore the Rambam teaches first the cheshbon bekiruv, because (a) today we only need the bekiruv anyway, and (b) even the meduyak starts from it.

3) Why the Mahalach HaEmtza'i is an "Average": The levana (and also the sun) don't move at a constant speed — in winter differently than in summer. The **mahalach ha'emtza'i** takes 12 months, divides precisely by 12, and makes an average. For a whole year in total it's precise, but for an individual month it can be approximate.

4) The Name "Molad" Fits the Approximate Calculation: The word "molad" (birth of a new levana) is a metaphor — a new levana isn't actually born. The metaphorical name fits well with the approximate calculation, because both are **mekarev to the seichel** — they make a complicated thing accessible. It's not entirely clear from where the term "molad" originates.

5) The Distinction Between Bekiruv and Meduyak Can Amount to a Whole Day: The distinction between the precise and approximate calculation can practically amount to a difference of a whole day (which would mean that witnesses testify on the wrong day). This is confirmed, and will be further explained.

Halacha 1 (End): The Cheshbon HaIbbur

The Rambam's Words: "Mizman she'ein sham Beis Din... hu cheshbon she'anachnu mechashvin hayom v'nikra ibbur."

Explanation: The calculation that we reckon today, when there is no Beis Din HaGadol that can be mekadesh the month al pi re'iyah, is called **ibbur**. The Rambam doesn't explain here why it's called ibbur.

Halacha 2: The Day and Night are 24 Hours, Division of the Hour into Chalakim

The Rambam's Words: "Hayom v'halayla arba'ah v'esrim sha'os b'chol zman, shteim esreh bayom u'shteim esreh balayla. V'hasha'ah mechulekes l'elef u'shmonim chalakim."

Explanation: A day with a night is 24 hours — 12 during the day and 12 at night. Each hour is divided into 1080 chalakim.

Insights and Explanations:

1) Sha'os Shavos, Not Sha'os Zmaniyos: The Rambam's words **"b'chol zman"** come to emphasize that all hours in all of Hilchos Kiddush HaChodesh are **sha'os shavos** (equal hours) — exactly like on our clock — and **never sha'os zmaniyos** (which change according to winter/summer). 12 hours during the day and 12 at night is a fixed division. When it's still light after 12 hours, that's "a problem of the sun" — but for the calculation of kiddush hachodesh one always calculates with sha'os shavos.

2) Why 1080 Chalakim — The Rambam's Reason: The Rambam explains that 1080 was chosen because **"lefi sheminyan zeh yesh lo chatzi"** — it can be evenly divided. 1080 has a half (540), a third (360), a quarter (270), a sixth (180), an eighth (135), a fifth (216), a tenth (108), a ninth (120).

3) Why Not Ten (Decimal)? Although people are accustomed to calculating by ten, ten is actually not such a good number for dividing. A third of 100 is 33⅓ — not a whole number. Therefore historically other bases were used like 60 (for time — minutes, seconds) and 360 (for degrees), because they have more factors.

4) What Makes a Number "Good" Mathematically? A "good" number is one with many factors — it can be divided into many equal parts. A prime number (like 7) is a "bad" number because it can't be divided into anything except 7×1. Twelve is a good number because it divides by 1, 2, 3, 4, 6.

5) The Special Advantage of 1080: 1080 can be divided by almost all numbers from 1 to 10: by 1, 2, 3, 4, 5, 6, 8, 9, 10 — **except for 7**. This makes it better than 360 or 60 for this purpose.

6) The Real Reason Why Exactly 1080 — The Chodesh HaLevana: The main reason is not just that 1080 has many factors, but that **the chodesh halevana is calculated precisely in chalakim of 1080 without any fraction**. The levana's month is 29 days, 12 hours, 793 chalakim — a whole number of chalakim. If one had used minutes/seconds, one would have gotten a third of a second (approximately 3⅓ seconds per chelek), which would have made all calculations complicated with fractions.

7) The Meaning of "V'harbeh Chalakim Yesh L'chol Achas Meihen": Not that one can make chalakim of a fifth, but that even a small fraction of 1080 (like a tenth = 108) is still a large enough number to allow for precise calculations without fractions.

8) Relationship to Minutes: 1080 ÷ 60 = 18, so there are exactly 18 chalakim in each minute. But seconds don't work out precisely (a chelek = approximately 3⅓ seconds). Minutes don't actually enter into this system — it's only a coincidental match, not a conscious division.

Halacha 3: The Duration of Chodesh HaLevana

The Rambam's Words: "Mi sheyiskabetzu hayare'ach v'hachama lefi cheshbon zeh ad sheyiskabetzu pa'am sheniya b'mahalcham ha'emtza'i" — from one kibbutz (conjunction) to the next, in average motion — **29 days, 12 hours, and 793 chalakim**.

Explanation: The time from one molad to the next molad — the "haflaga" — is exactly **29 days, 12 hours, 793 chalakim**. A chodesh halevana is essentially 29½ days plus 793 chalakim.

Insights and Explanations:

1) Notation: The Rambam wrote out all numbers in words (with gematrios afterward), not with numerical symbols. This makes it difficult to calculate. A useful notation: **29 | 12 | 793** (days | hours | chalakim).

Halacha 3 (Continued): Shana HaLevana Peshuta and Me'uberes, Shanas HaChama

The Rambam's Words: A shana peshuta of the levana (12 months) is **354 days, 8 hours, 876 chalakim**. A shana me'uberes (13 months) is **383 days, 21 hours, 589 chalakim**.

Explanation: One takes the chodesh halevana (29 | 12 | 793) and multiplies by 12 or 13.

Insights and Explanations:

1) The chalakim (1080 chalakim in an hour) one needs to get used to — 876 chalakim is almost a whole hour (1080). The goal is not to know "what time it is" but to calculate when the molad is.

2) Shanas HaChama: According to this calculation, a shanas hachama is 365 days and 6 hours exactly. But the Rambam himself will later say that the calculation is "not truly precise" — there is another calculation in a later chapter. The Rambam doesn't tell us here what shanas hachama means exactly.

3) The Difference Between Shanas HaChama and Shanas HaLevana: 365 days 6 hours minus 354 days 8 hours 876 chalakim = **10 days, 21 hours, 204 chalakim** (approximately 11 days).

Halacha 4: She'eris Chodesh HaLevana (Remainder of a Week)

The Rambam's Words: When one casts (tashlich) the chodesh halevana upon seven, there remains (she'eris) **one day, 12 hours, 793 chalakim — siman: 1-12-793**.

Explanation: 29 days ÷ 7 = 4 whole weeks (28 days), leaving over 1 day + 12 hours + 793 chalakim. Each molad shifts by 1 | 12 | 793 from the previous molad.

Insights and Explanations:

1) What "Tashlich" Means: The concept "tashlich" in mathematical terminology means "casting away" — one casts away the whole weeks and keeps only the remainder.

2) Why Calculate in Weeks (Days After Shabbos) and Not Just Days? Shabbos is "mesura l'chol echad v'echad" — everyone always knows when Shabbos is, it's never a doubt. Therefore Shabbos is the anchor point, and one calculates how many days after Shabbos the molad falls. This is also practically easier.

3) Practical Nafka Mina: If someone remembers what was announced in shul last month (the molad), he can very easily calculate the molad of the coming month — just add 1 | 12 | 793.

Halacha 4 (Continued): She'eris Shana Peshuta and Shana Me'uberes

The Rambam's Words: She'eris shana peshuta = **4 days, 8 hours, 876 chalakim — siman: 4-8-876**. She'eris shana me'uberes = **5 days, 21 hours, 589 chalakim — siman: 5-21-589**.

Explanation: 354 ÷ 7 = 50 whole weeks + 4 days left over (with hours and chalakim). 383 ÷ 7 = 54 whole weeks + 5 days left over (with hours and chalakim).

Insights and Explanations:

1) The chalakim always remain consistent with the original calculation — because one only removes whole weeks, the hours and chalakim remain as they are.

2) Practical Application: If one knows the molad Tishrei of one year, one adds 4-8-876 (for a shana peshuta) or 5-21-589 (for a shana me'uberes) to get the molad Tishrei of the coming year.

Halacha 5: How to Calculate the Molad from One Month to the Next — Example

The Rambam's Words: "K'she'ata teida molad shel eizeh chodesh shetirzeh, tosif alav 1-12-793 v'teida molad chodesh shel'acharav."

Explanation: When one knows the molad of one month, one adds 1 | 12 | 793, and one gets the molad of the next month.

Insights and Explanations — Example Worked Through:

The Rambam's Example: The molad of Nissan was Sunday hour 17, 107 chalakim (siman: 1-17-107). One adds 1-12-793:

- Chalakim: 793 + 107 = 900 (less than 1080, so no whole hour)

- Hours: 17 + 12 = 29, which is more than 24 — one removes 24 and has 5 hours plus another day

- Days: Sunday + 2 days (1 from she'eris + 1 from extra hours) = Tuesday

The result is molad Iyar: leil shlishi (Tuesday night), 5 hours, 900 chalakim — siman 3-5-900. The Rambam confirms this.

Halacha 5 (Continued): General Rules of Calculation — Hours, Days, Weeks

The Rambam's Rule: K'shetosif she'eris im she'eris:

- **1080 chalakim = 1 hour** — add to the hours

- **24 hours = 1 day** — add to the days

- **7 days = cast away** (because one only calculates which day of the week, "she'ein anu mechashvin minyan hayamim")

Insight:

The distinction: by chalakim and hours — when one reaches a whole unit, one adds to the next column. But by days — when one reaches 7, **one deletes** (one starts from zero), because "the week is a rolling thing."

Halacha 5 (End): Molad BeHaRaD — The Beginning of All Calculations

The Rambam's Words: The first molad of brias ha'olam (shana rishona shel yetzira) was **yom sheni (Monday night), 5 hours, 204 chalakim — siman BeHaRaD** (2 = Monday, 5 = 5 hours, 204 = 204 chalakim).

Explanation: From this point on one can calculate month after month or year after year until today, and one will know every molad.

Insights and Explanations:

1) Question: Molad BeHaRaD Doesn't Match Brias HaMe'oros: Hashem created the me'oros on the fourth day (yom revi'i), which doesn't match molad BeHaRaD which is yom sheni. **Answer:** The entire molad-calculation is not a ma'aseh bereishis-calculation. One simply **calculated backwards** from known molados, and it came out that the first molad would have been BeHaRaD. This is a mathematical extrapolation, not a historical statement about what actually was at brias ha'olam. "No one knows at all what was then." Tosafos and other commentators discuss this, but regarding the calculation it makes no difference.

2) An Important Principle: One needs to know nothing except molad BeHaRaD + 29-12-793 × how many months have passed, in order to calculate every molad. But for this one needs to know which years are peshutos and which are me'uberos — which brings us to the next topic.

Halacha 6: Machzor of 19 Years

The Rambam's Words: "Kol tesha esreh shana" — every 19 years is a **machzor**, of which **7 are me'uberos** and **12 are peshutos**. The shanim me'uberos are: **3, 6, 8, 11, 14, 17, 19** — siman 3-6-8-11-14-17-19.

Explanation: This is the Metonic cycle which allows synchronizing the levana-year with the chama-year.

Insights and Explanations:

1) Two Reasons Why We Need the Machzor: (a) To know which year is peshuta and which me'uberes, (b) To simplify the calculation — instead of calculating thousands of years from bereishis, one can calculate in blocks of 19 years, and only know which year in the cycle one is holding.

2) Why Specifically 19? — The Rambam's Explanation: When one takes 12 peshutos (× 12 months = 144 months) + 7 me'uberos (× 13 months = 91 months) = **235 months**, and one calculates all the days/hours/chalakim (29-12-793 × 235), and one makes whole hours from 1080 chalakim and whole days from 24 hours — **it comes out almost exactly 19 shenos hachama**. After 19 years the sun and levana stand almost in the same place. "Precisely completely they will never be, but almost completely one hundred percent."

3) Step-by-Step Calculation of the Machzor — "Even Tinokos Shel Beis Rabban Can Understand It": The difference between shanas hachama and shanas halevana is 10 days, 21 hours, 204 chalakim. Each year the levana remains more "in debt" relative to the sun. When the debt reaches a whole month (approximately 29½ days), one adds a chodesh ibbur:

- **Year 1:** 10 days in debt
- **Year 2:** 21 days
- **Year 3:** 32 days — more than a month! → **chodesh ibbur**. Remains approximately 3 days.
- **Year 4:** 14 days
- **Year 5:** 24 days
- **Year 6:** 35 days → **chodesh ibbur**
- **Year 7:** 17 days
- **Year 8:** 28 days → **chodesh ibbur** (almost a whole month)
- **Year 9:** 9 days
- **Year 10:** 20 days
- **Year 11:** 31 days → **chodesh ibbur**
- **Year 12:** 12 days
- **Year 13:** 23 days
- **Year 14:** 34 days → **chodesh ibbur**
- **Year 15:** 15 days
- **Year 16:** 26 days
- **Year 17:** 37 days → **chodesh ibbur**
- **Year 18:** 18 days
- **Year 19: exactly 29 days → chodesh ibbur** — the **only** time it remains less than a whole day!

After 19 years with 7 chodshei ibbur one arrives at almost **zero** days difference — there only remains **1 hour and 485 chalakim**. This is the best machzor one can have — one cannot do better than this, unless one makes a machzor of thousands of years.

Halacha 6 (Continued): She'eris HaMachzor — 2-16-595

The Rambam's Words: The remainder of a whole 19-year machzor relative to weeks is **2 days, 16 hours, 595 chalakim** (siman: **2-16-595**).

Explanation: One calculates: 12 shanim peshutos × 4-8-876 + 7 shanim me'uberos × 5-21-589, then divides by 7 (weeks), and the remainder is 2-16-595.

Insight — The Practical Use:

Whoever knows the molad of the beginning of one machzor, only needs to add 2-16-595 in order to get the molad of the beginning of the next machzor. This works **ad sof kol ha'olam** — every machzor shifts by exactly the same amount.

Halacha 6 (End): Nimtza — Chadashim Kulam Chodshei Levana, Shanim Kulam Shenei Chama

The Rambam's Words: In this machzor, **chadashim kulam chodshei levana** (29-12-793), and **shanim kulam shenei chama** (365 days, except ~1 hour).

Insight:

When one looks at the machzor in a general way, one doesn't need to be confused — it's a system that satisfies both: the months follow the levana, and the years (on average) follow the chama.

Practical Application: How to Calculate the Molad of a Specific Year

The Rambam's Method: One takes the shnas bria, divides by 19, the quotient is how many machzorim have already passed, the remainder is which year in the machzor one is holding.

Example Carried Out (Shnas 5786):

1. 5786 ÷ 19 = 304 machzorim, remainder = **10** → we are holding in the **tenth year** of the machzor.

2. One adds **304 × 2-16-595** to **BeHaRaD** (the first molad of brias ha'olam).

3. In the first 10 years of the machzor there are **3 shanim me'uberos** (3, 6, 8) and **7 shanim peshutos**.

4. For each shana peshuta one adds **4-8-876**, for each shana me'uberes **5-21-589**.

5. One completes chalakim to hours, hours to days, days to sevens (weeks), and the remainder is the **molad Tishrei** of the desired year.

Insight — Molad of Each Month:

After one has the molad Tishrei, one adds **1-12-793** (remainder of a month) in order to get the molad Cheshvan, and so on for each month.

Insight — All Molados Begin from Tishrei:

Although regarding other matters one calculates from Nissan, but **calculations of ibbur hashana and molad** always begin from **Tishrei**.

General Insight: The Calculation is One Hundred Percent Calculation — No Re'iyah Needed

The entire cheshbon hamolad is a pure mathematical calculation — one **never needs to look at the levana**. The one who makes the luach has **never looked at the sky** — he only did the calculation. If he had looked, he would have seen things that **don't match precisely** with the calculation — because there are inaccuracies in many places. But the levana follows the calculation **approximately** enough that there never comes out a significant difference. This is the **cheshbon hamitzva** — it is sufficiently precise for practical purposes.

Introduction to the Next Chapter: Dechiyos — From Molad to Rosh Chodesh

One would think that when one knows the molad, one already knows when Rosh Chodesh is — but **no**. Even in the cheshbon hakevi'us that is used today, Rosh Chodesh is **not automatically** the day of the molad. There are **four dechiyos** — rules that postpone Rosh Chodesh from the day of the molad to a later day. Only when one adds the dechiyos to the cheshbon hamolad, does one know when Rosh Chodesh actually is. **This is the topic of the next chapter.**

Full Transcript

Laws of Sanctifying the New Month Chapter 6: Calculating the Average Molad

Introduction: The Dispute Between the Rambam and Ramban Regarding Sanctifying the New Month in Our Time

Speaker 1: Good day. Today is a day, and we're going to learn Laws of Sanctifying the New Month Chapter 6. Yes? I wanted to say a beautiful insight that I see here from the previous chapter, before we begin today's chapter, that they discussed that there is a dispute between the Ramban and the Rambam. Yes? What is the dispute? That the Ramban said: How do we make months today according to calculation? It must be that the Beit Din of old made kiddush hachodesh for all the months of today. Why? Because the Ramban holds two things, two things that the Ramban argues.

The Two Arguments of the Ramban Against the Rambam

First of all, how can the Rambam say that the Beit Din of Eretz Yisrael today does it? Says the Ramban, what does that mean? The Beit Din of Eretz Yisrael doesn't have semicha, who are they? The second thing - doesn't the Rambam know how the Rambam took his halacha l'Moshe miSinai that one can do it according to calculation when it doesn't exist? But it will be understood that these two laws on the other hand, the Rambam cannot say this, because the Rambam holds that there must be a Beit Din HaGadol in order to make semicha, not to make actual kiddush hachodesh. Just any Beit Din is not enough. Just any Beit Din can only do it with calculation.

The Leniency and Stringency of the Ramban

But we grasp that this is actually dependent on the great dispute of... It turns out that there is a leniency with a stringency from the Ramban. That is, on the one hand, the Ramban holds that one doesn't need... Beit Din HaGadol, the Beit Din HaGadol is not lacking, but on the other hand one does need semicha, and semicha doesn't exist.

The Rambam's Approach: The Central Beit Din is the Main Thing

The Rambam looked at it the opposite way, that the main thing is Beit Din HaGadol. He says, the main thing is that there is one person who decides whether the Beit Din HaGadol has semicha or not, that is already a smaller problem. So the current Beit Din HaGadol is as if in Eretz Yisrael. And therefore the Rambam truly said, in Laws of Sanhedrin, that the Jews in Eretz Yisrael can make semicha today if they want. Because for the Rambam, semicha, which the Rambam looks at as the main thing, regarding this he had to say that the semicha of old already made kiddush hachodesh for today, is a smaller thing than the essential idea of one central Beit Din.

The Deeper Difference Between the Ramban and Rambam

So here is truly the dispute. That according to the Ramban, the main thing is such semicha, and since it doesn't exist today, one needs to have another solution. According to the Rambam, the main thing is a central Beit Din. And it's important, therefore no central Beit Din can do anything, but the central Beit Din even without semicha, even in our time, can do everything. It can even make semicha itself if it wants. It just doesn't do that, it still makes kiddush hachodesh. Make it for me too.

It will come out a bit more interesting things according to this. According to the Rambam one needs to have, whatever the generation is, if the generation, the entire generation is very weak, and there isn't really any Sanhedrin, the fifteen Jews in

Eretz Yisrael who learn Torah, they are the best that we have, as it says in this week's parsha, "v'halachta el hakohen asher yihyeh bayamim hahem" - that's it. And on this he says in Sefer HaMitzvot that there will be a promise, not "lo tishkach mipi zar'o," something will be a promise that there will be. There is no promise that one can learn the Torah. But the main thing is the Jews, more than the Torah.

The opposite. The Ramban does have a view of how this should look, therefore he has a problem with reality. The Ramban didn't start from reality. If this is the chacham sheb'yamecha, it's fallen... even if he's not a chacham, that's what I say. It's because the Rambam's view is apparently much stronger - the central halacha which is more important than the technical halacha whether he has a din of semicha or not. Yes, anyway.

Connection to the Rambam's Approach Regarding Rabbinic Authority

It could also be that it will fit with the way the Rambam looks at how the things of the rabbis we must follow, because this has the haskamas klal Yisrael. Therefore, it doesn't have to be cleverly maintained, it doesn't have to have content. The main thing is that that generation, that is klal Yisrael, that is the best of klal Yisrael, that generation is enough. Right, it's more the thing.

Introduction to Chapter 6

Anyway, we will thank the donors and Yoel, the righteous rabbi Rabbi Yoel Wertzberger and all the other tzaddikim, and we will try to learn Chapter 6. So, the chapter goes into the "chochmatechem u'vinatechem," the wisdom of calculating moladot and calculating years and months. Which is a great wisdom, the Rambam says that the Gemara says "ki hi chochmatechem u'vinatechem l'einei ha'amim." And the Frankel Rambam, which is the scholarly Rambam, they went and made it in small letters. As if to say that this isn't really, this isn't really something that can be expected of us, but this is "ki chochmatechem u'vinatechem l'einei ha'amim." So thank God that our gaon Rabbi Yitzchak did the opposite, and he made it in very large letters, he learned it well, and we all look to learn from him all these laws. So say the lazy people, God forbid.

And you will look at the end of the Rambam, the Rambam will actually speak, at the end of Chapter 17 he will speak about the topic of "ki chochmatechem," and we will then return to speak about this more. I don't remember one hundred percent what he says, but he speaks about this.

The Rambam's Method of Clarity

But we actually hold, we're going to learn one chapter at a time. The secret of learning is to learn one chapter at a time.

The Rambam in Moreh Nevuchim Regarding Astronomy

The Rambam himself, I saw very nicely in Moreh Nevuchim, in a place where he asks many questions on the astronomy that he learned. People think that the Rambam was some naive Jew, he copied from Ptolemy, I know from whom, other scientists of his time, that what the science was, and everyone says today there is better science.

First, we will see soon, regarding the point of kiddush hachodesh there is almost no better science. There is perhaps half a second better, but not really better. But second, the Rambam was not at all such a thing, he didn't believe in the science of his time, that wasn't the shita of the Rambam. The halacha is there, as you say. But science is yes a thing, the opposite, that's the difference. The halacha is, the main thing is that there should be order, that the rabbi today cannot, is unable, what's the difference? We are that. But science means what the reality is. Understandably, kiddush hachodesh is a combination, because there is yes the halacha, we'll already see.

But the Rambam knew that there are many questions on the science that existed, and he even lists certain questions, he has a great reason why he lists it. But he says, he writes, Moreh Nevuchim he wrote for a student, Rabbi Yosef, I don't remember how he goes, Rabbi Yosef, Rabbi Yosef, anyway, and he said to the student, I remember, do you remember, we had an astronomy lesson, we learned how everything works. Then I didn't tell you at all all the questions. Why not? I didn't want to confuse you. I wanted you to be able to understand clearly the simple calculation that I'm saying now. Greater, I tell you, you want us to know that it's not at all so simple, there are difficulties, there are questions.

The Rambam's Pedagogical Method: From Easy to Difficult

So the Rambam was an expert at this, at making simple things, one thing at a time, and not confusing the people immediately with more advanced things. Even kiddush hachodesh goes very strongly from easy to difficult, and even many things, that is, when one will look at the commentators one will become confused even, because the commentators, and as when we usually learn, we make simple things complicated. It's a very strange thing that we do when we learn the Rambam, one really needs to try to emphasize more the other thing, it's just harder. The Rambam took all the investigations and made clarity, an action, and you will come tell us why the rabbis did this, why the rabbis did that. It's very enjoyable, but one loses the clarity.

So in this law we try not to do it, we will yes do it a bit, because one can't do otherwise. But the Rambam makes very clear the order, and the chapter is explicitly a chapter that is not one hundred percent accurate, but it's useful for the continuation, and we try to learn what he says in the chapter, without going into all the things that aren't correct and what is correct etc. Right? Yes. Okay.

Law 1: Calculating the Conjunction of the Moon with the Sun

Says the Rambam thus: **"When they would do it according to sighting,"** when one does it means that one sanctifies the month based on the sighting of what the witnesses come to say that they saw, it went before them were calculations. **"They would calculate and know,"** the sages, the members of the Beit Din, calculated and knew **"the hour when the moon would conjoin with the sun with great precision."** They knew the exact time when the moon and the sun, the sun and the moon, would become conjoined. Conjoined means that they will be completely one opposite the other. When the sun is completely opposite the moon, is the time when we don't see the moon, because it shines on the entire other half of the moon that we cannot see, so nothing sticks out from the light. That's what conjoined means. And then is the end of the previous month, and when the sun will begin to come out a bit further, and there one will begin to see the moon. So... when the conjunction they knew that after a bit will be the... **"In order to know... in order to know, whether the moon will be seen or will not be seen,"** if

this is already the hour of conjunction, one goes approximately after another day, or what, one will be able to see the moon. Very good.

Discussion: Conjunction and Sighting - Two Separate Things

Let me just explain, one must be precise here. That is, the Rambam says, when one knew according to sighting, the sages had the first step, although you say sighting and conjunction are two different things, because the sighting is always after the conjunction, with a certain amount of time, and also according to the time and according to various calculations that we will see later.

And this he has now said for example that the month works, I don't know exactly when the month works, I don't know what difference it makes, you can call it the cycle, one can calculate from whenever one wants, from one conjunction to a conjunction, from one side to another side. I saw here and from below, the Lubavitcher Rebbe investigated such an investigation, when does the month truly begin, when one cannot see the moon, or when one can yes see the moon. But it's all investigations in the abstract, like the question, like the vision is not an investigation whether the roof holds on the people, or the people lie on the roof.

I say however, the sign is not... We calculate the month from the sighting, not from the molad. The molad does nothing in as if making the month. It does something, because this helps us the calculation. But the investigation when the month is, is a question of what you call. I don't know, for the sake of, it wasn't established. Again, one couldn't, because this one cannot see. One must be able to see something. Because you can say what one wants. In practice, the law is that... the conjunction is much clearer than the sighting. If one would have wanted this, you would have done it. One didn't want this.

Continuation of Law 6: Difference Between Conjunction and Molad - The Two Levels of Calculation

Speaker 1: When one cannot see the moon, or when one can yes see the moon? But it's all investigations in the abstract, like the question whether the... It's not any investigation, whether the roof holds on the people, or the people lie on the roof. It's approximately a thing, a care, not any practical difference. We want to have a thing that is consistent, that is always the same time, and that should be our sign.

I say however, we calculate the month from the sighting, not from the molad. The molad does nothing in as if making the month. It does something, because this helps us the calculation. But the investigation when the month is, is a question of what you call. I don't know if it's in practice. It wasn't established. Again, one couldn't, because this one cannot see. One must be able to see something. Because you can say what one wants. The deed, the law is that... the conjunction is much clearer than the sighting. One would have wanted to do this, one would have done this. One didn't want to do this. Whoever began the matter of the months of the moon, went with the sighting. All the opinions, not whatever you call innovation, the sighting. Why is it called... okay, so anyway, so the conjunction, that's when one certainly cannot see it. You're right that it's the clearest thing as in the... in a certain calculation it's the clearest, like time, it's typed, one cannot see it. But it's only relevant to the calculation.

The Two Levels of Calculation: Precise Proximity and Approximate Calculation

Now, the calculation itself has two levels. This is the important thing. There are two levels, and it's dependent on a reality that the Rambam will explain later, so we won't explain it now. But there are two levels. One is called precise proximity. Precise proximity means when it's truly the body of the sun, the sun, and the body of the moon, when it's truly one opposite the other precisely. That's the meaning of precise proximity, truly and precisely.

Besides this, says the Rambam, now he says a word, that when the Beit Din, at the time when the Beit Din had to know truly when the sun will be able to be seen, they certainly had to know the precise proximity calculation, as the righteous ones who calculate precise proximity, they don't calculate what we're going to learn now. But the beginning of those who do the calculation, the beginning of that calculation of precise proximity, the calculation that they calculate approximately is the calculation that one makes approximately. Approximately means not to the exact time, to the great precision, as you say. **"And they know the time of their conjunction without precision,"** then one knows... That is, when one makes strong calculations, then one comes to a clear great precision, but when one makes a bit of calculation one comes to an approximate calculation.

The Two Ways to Come to a Precise Calculation

And it appears that not only this, but it helps. That is, there are two ways. If you want to make a precise calculation, you can do it two ways. You can do the easy way and the hard way. You can know precisely how much time it takes, or whatever one needs to calculate, and calculate precisely. Or you can do it differently: you can first calculate the approximate, afterwards you will add or subtract from that the addition, which is called the correction so that it should be precise. And this is a way of much, when one makes calculations, you know, many times it's easier. One calculates two hundred and forty-seven, first one calculates two hundred, afterwards forty, afterwards seven. So first you make approximately the calculation, afterwards you add to it the precision.

Innovation: Even the Sages Began from the Approximate Calculation

So I think that the Rambam means here to say, that even when one will yes calculate precisely, although today we will not calculate precisely at all, but even in those times when they did yes calculate precisely, they also always began from the imprecise calculation. Therefore, we learn first the imprecise calculation. We only make the imprecise calculation, because we don't need to know when one will see the moon. But even they began from this.

Discussion: Did the Sages Need to Know Precisely?

Speaker 2: The sages also essentially didn't have any reason that they should need to know precisely.

Speaker 1: Yes, they did yes have. If it's for the practicality to know when witnesses will come... whether the witnesses are telling the truth. One must yes. One must know whether the witnesses are telling the truth.

Speaker 2: No, not at all. It can be a range. The approximate can be a time when there cannot be the sighting. It can be a day earlier, or half a day, whatever. One also asked the witnesses the hours.

Speaker 1: That is, the difference between the precise and the imprecise cannot come out to a difference of a day.

Speaker 2: It can yes.

Speaker 1: It can yes. How? We'll see it soon. I don't know. Don't say it out, but it can come out a difference, certainly.

The Rambam's Explanation: The Average Course and the Name Molad

Translation

The Rambam says, **she'at kibbutzam belo dikduk**, the time when the sun and the moon come together, and we calculate that now they come together belo dikduk. They don't actually come together, but we say they're coming together. We establish that this is called she'at hakibutzah. **Ela, bemahalacham ha'emtza'i**, that is, we learn approximately, we make a rough calculation.

Okay, so the word "mahalach ha'emtza'i" has an actual meaning. It means the average. In other words, that is, let's say, and this is one of the reasons, there are other real reasons, but let's say that every month is a bit different, and in the winter the moon doesn't go the same length or strength as in the summer and so forth. So, then one would have to calculate all these details. And the sun too, there are differences. The sun doesn't go so fast, that is, the sun perhaps by itself goes exactly that fast, but it appears to us that it goes differently. Perhaps the sun doesn't go at all, not our topic, but it takes longer in the summer and in the winter and so forth. It's not always exactly the same.

But what we do is called a mahalach ha'emtza'i, in other words an average. That is, we take twelve months, divide it by twelve precisely, make an average, this is what is called molad. This is **hu hanikra molad**. That is, the Rambam makes a distinction with the word kibutz. Kibutz means the precise calculation, and molad means the imprecise calculation. Or you can call it a molad, an average. It's approximate, it's not approximate, it's precise. In other words, throughout a whole year it comes out precise, in total. For this month it can be approximate.

It's actually fitting, because molad itself is a kind of metaphor that comes to explain for the simple people, that a new moon is being born, it's not actually being born. It's very fitting that when we want to bring it close to the intellect, we use it with something that is close to the intellect. It's not entirely clear where the term molad comes from, it's also not clear regarding the distinction that the Rambam makes with the word molad and the word kibutz, everyone agrees, not everyone uses it that way. What we call, but in any case what we can call molad, what is announced in shul, is what the Rambam calls molad.

Continuation of Law 6: The Calculation of Ibur

The Rambam says, what we calculate nowadays, **mizman she'ein sham beit din sheyikavu al hare'iyah, hu cheshbon she'anachnu mechashvim hayom, venikra ibur**. The calculations come to us in the ibur. **Elu hen**. For nowadays to make the molad, and nowadays to make ibur chodesh. Yes? To make... no no no, he doesn't say it that way. Explain what he says.

The Rambam says this: The main calculation... now he's going to explain the calculation. The calculation that we calculate today, the not-precise calculation, which is as soon as there's no beit din, the calculation... we always calculate when there is no beit din hagadol that can establish a sighting, and therefore we calculate it today. What this calculation has a name, it's called ibur. The Rambam didn't explain here why it's called ibur, but the name of this calculation is ibur. **Kachah elu hen**, this is the main calculation. He's going to begin saying the calculation. How one can know when the molad will be with calculation.

Law 7: The Foundations of Calculation – Day, Hour, and Chalakim

A Day and Night is 24 Equal Hours

The Rambam says this: **Hayom vehalailah yesh arba'ah ve'esrim sha'ot bechol zman**. A day together with the night consists of twenty-four hours, **shteim esreh bayom ushteim esreh balailah**. He means to say also the average of them, but there is winter and summer.

Speaker 2: No, he means bechol zman.

Speaker 1: No, it's always so. And in other words, no, no. Okay, I'll say no each time, or can I say it from the start. All the hours that we're going to calculate here in all of Hilchot Kiddush HaChodesh are equal hours, never zmaniyot hours. In other words, what the hours the Rambam calculates are exactly hours that stand on our clock, 12:24 divided, what we call 12 for them 12, that's why he says the word bechol zman. You shouldn't think that it changes in the winter and in the summer. It's always 24 hours, and always 12 during the day and 12 at night, what we call at night, sometimes it's still light. That's already a problem of the sun, that the sun doesn't adjust itself to our hours. What is calculated with kiddush hachodesh, but the hours of kiddush hachodesh are all equal hours, because otherwise one couldn't know when something will be. The calculations here are all precisely a twenty-fourth part of a day.

Division of the Hour into One Thousand and Eighty Chalakim

Further, **veha'sha'ah mechulek le'elef ushmonim chalakim**. Every hour, if one wants to divide it into a certain smaller amount so that one can make calculations, one can divide it well into one thousand and eighty. One thousand and eighty.

The Rambam says, why should one divide an hour into one thousand and eighty? One can divide it, because by us it's divided into sixty minutes, or whatever, why one thousand and eighty? The Rambam says, there's a good calculation reason why the best way to divide and be able to make calculations should be into one thousand and eighty. You see, **lefi sheminyan lazeh**, if we divide it this way, **yesh lo chetzi**, one can divide an hour in half. Half of one thousand and forty. Half of one thousand and eighty.

Discussion: How Much is Half of 1080?

Speaker 2: Calculate, you say how much it is.

Speaker 1: I'm saying how much do you think it is. I mean an eighth. Sheminit. Okay, I mean. How much? How much?

Speaker 2: No no, how much? Nu, tell me what is half of two hundred and seventy.

Speaker 1: Hello, hello. And half of 70. Actually yes, yes, wonderful. You can. The point is that it's easy. What does it mean that it's easy? What whatever. I don't remember now very quickly. Okay, let's do this. What is half of 200? Do you know?

Speaker 2: No, no, I'm going yes to pursue. Because the thing is half of 100?

Speaker 1: I mean that half of 200 is 100 usually, and half of 70 I also know. It's 35. 135 is a half. The point, we need to

explain this, okay, but carry on.

The Other Divisions of 1080

Speaker 2: A third is how much?

Speaker 1: Yes yes. Do you want to learn or do you just want to say what is a bit? Wait good. Yes, that's the same basically. A ninth isn't anything, it's another thing. A sixth is half of a third, but a ninth isn't anything of anything. It's just another thing, right? It sounds nice, six, three, nine, but it has no connection. Right? A ninth is three thirds, okay. A third is two thirds, and a ninth is three thirds. Yes. Okay. And a fifth is an issur, a fifth and a tenth.

Continuation of Law 2: Why Exactly 1,080 Chalakim in an Hour?

A sixth is half of a third, but a ninth isn't anything of anything, it's just another thing. Right? It sounds nice, six, three, nine, but it has no connection. Right? A ninth is three thirds. Okay. Instead of two thirds, and a ninth is three thirds. Yes. Okay. And a fifth and a tenth, a fifth and a tenth. It's also two fifths is a tenth. True.

The Rambam's Words: "Veharbe Chalakim Yesh Lechol Elu Hashemot"

The Rambam says further, **"veharbe chalakim yesh lechol elu hashemot"**. He explains, in these names, the word chomesh, one can make parts of the chomesh. No, no, what he means is very simple. Okay, let's say the simple thing.

Everyone knows, what does everyone know, that there are good numbers and bad numbers they knew. Did you know? You thought all numbers are equal? No, not all numbers are equal. There are better and worse.

No. Yes, it's true that there was... Pythagoras said that odd numbers are good and even numbers are bad, and so it is in the Gemara. Anyway, no, I don't mean that. Good and bad I mean mathematically, not according to segulah. Mathematically. There are numbers that are good I mean useful for certain things.

So, we... What about three? Why is it useful? Three? Three isn't big enough for anything.

Why Ten Isn't Such a Good Number

So, what's interesting is that we're very accustomed to dividing things by ten. Now, ten isn't actually so useful. You know why? Ten isn't such a good number as people think. And the proof is that there aren't ten months in the year. Okay, no, it's not really a proof.

But and the proof, and we, even we who calculate time, count it by twenty-four and by three hundred and sixty, or by sixty times sixty, which is three thousand six hundred etc., not by ten.

Why? I'll tell you why. Imagine there are one hundred minutes in an hour. What would you say a third of it is? What is a third of one hundred? It's not, basically. A third of one hundred is not. There's no such thing. There's no whole number that is a third of one hundred. It's thirty-three and a third. Forget it. In short, you can't say a third.

A third of sixty is very cute. It's twenty minutes. Everyone knows? Three times twenty is sixty. So, that's what you say. But one doesn't have to say it that way. We're accustomed to think that way about sixty. And you can say that sixty is a thing in itself.

I'm just telling you a fact, that when one chooses a large number to divide things, one must choose well, because not all numbers divide evenly. There are numbers that have, what's called in English, more factors. One can divide it by more numbers.

Prime Numbers and Composite Numbers

Everyone goes from a prime number which is a very bad number, and one can't divide it by anything. True? For example, the number seven, one can't do anything with it except seven times one. It's not two times anything, not three times anything, not four times anything, not five times anything, and so on. Right?

Unlike the number twelve, which is quite a decent number for example. Twelve divides by what? By one, by two, by three, by four, not by five, by six. Right? That's all. It has very many ways to divide itself. And so on. Therefore many things are accustomed to be calculated by twelve, because twelve is very easy to make halves and thirds and quarters and so on.

The Special Merit of 1,080

So the number 1,080 is first of all much more useful. The Rambam explains, one can divide it by almost all numbers between 1 and 10. Do you understand?

- By 1. That is, by 1 is simple.

- By 2? Yes, one can divide it in half.

- By 3? We just spoke about it.

- By 4? One can divide it into quarters, true?

- By 5? Here he says, one can divide it into fifths.

- By sixths? One can divide it into sixths.

- By sevenths? One cannot divide it. Okay? So seven is crooked.

The number seven, I'll tell you something else, I'll tell you something different. The number seven is crooked with the number 1,080. I'll tell you an interesting fact. The number 8 isn't crooked, the number 9 isn't crooked, and so on. 10 isn't crooked. After 10 we don't calculate.

That is, except for 1 and 10 it's an exceptionally good number, even better than 12 which I calculated now, or 60. That is, the number 1,080 isn't crooked with any one of the numbers from 1 to 10, except for 7. It's quite a nice number, a fine Jew.

Why Exactly 1,080 and Not 360?

Now, until here we understand why one should use such a kind of number. In practice one still doesn't understand why exactly 1,080, because if you think you'll see that the number like 360, which we usually use for degrees of a circle and so on, for an hour in a certain way, also divides by all these numbers.

But the problem will be something else. The problem will be, that we'll see in the next section, that we want to have a number that can tell us how much time the month of a moon takes. This is the purpose that the Rambam says here.

The whole answer why we calculate chalakim here is, because the month of a moon is not a whole day, also not a whole hour, also not a whole minute for example, which is a sixtieth of an hour, it's also not that. But what is it? It's also not even a minute with seconds, it doesn't divide clearly even by a second which is a sixtieth of a minute.

The number that divides clearly is, if we divide the hour by 1,080, then it divides 100% clearly by a chelek. In other words, I'm going to say that a month of the moon is at the end 748

chalakim, 793 chalakim. If you had a larger number, you would have to say 33 chalakim with a third. But we don't want thirds in our calculation, it makes it very complicated to calculate any time there's less than a whole number.

Therefore the sages, whoever started this calculation, decided to calculate the lunar month with a chelek, where the chelek is one of 1,080 in an hour.

The Meaning of "Veharbe Chalakim Yesh Lechol Achat Mehen"

What this is the meaning of what the Rambam says **"veharbe chalakim yesh lechol achat mehen"**. That is, even the smallest number here has a lot. It's not simple that a third of 360 has only in total like it's one hundred and twenty, it's not so much. Or a third of ten is nothing. I mean, a third of twelve is only four, you can't divide enough.

But a part of the parts there is a lot, so each one, even a tenth of this, is a large number. It's one hundred, it gives us enough room to make the lunar month be a precise number, and not a number with a fraction. Until here is the kind of why there are one thousand and eighty chalakim.

How One Calculates Chalakim in Minutes and Seconds

And this is one of the things that is difficult for people, because people hear that the molad will be so many chalakim, no one knows what a chelek is. It's actually approximately here, if we divide it, because because a minute is a sixtieth, you can divide one thousand and eighty by sixty comes out eighteen. So one can say, because we're accustomed to minutes, there are eighteen chalakim in every minute precisely.

But the seconds it doesn't work out precisely anymore, that it's approximately three and a third seconds. We don't need the actual... right, what we do is something of a modern thing, because it doesn't make the calculation of chalakim, we don't have minutes, minutes don't come into chalakim. It's perhaps a thing to make easier for people, but actually, because it means four times eighteen, a minute has eighteen chalakim.

Actually no seconds come into the topic of chalakim, and that means no minutes come in. It's just that this fits with the calculation, because a minute is also a whole amount of chalakim, therefore you can say minutes. Anyway, but actually it's a very useful calculation, as we see that all the calculations that I'm going to calculate will go much easier. If one would have to write with minutes and seconds, where a second isn't at all a thing that divides clearly in the calculation, one would struggle much more. Right.

Law 3: The Duration of the Lunar Month

Overview: The Three Foundations of the Calculation

So here, we know simply plain that there's a thing of a day, there's a thing called a day, there's a thing called an hour, and there's a thing called a chelek. That's all. There's ready here another thing called a week that we'll use later, but everyone knows that a week is seven days, so the Rambam doesn't need to say it. Yes?

Good, now we're going to learn another foundation, law 3. So now we're going to learn, we already know what all the numbers that we're going to use are. Now we're going to learn how long is a month, and after that we'll be able to know when the next month will be, and so on.

The Rambam's Words: The Duration from Kibutz to Kibutz

The Rambam says this: Using the numbers we've now learned, **"misheyitkabetzu hayare'ach vehachamah lefi cheshbon zeh ad sheyitkabetzu pa'am sheniyah bemahalacham ha'emtza'i"** — that is from one kibutz to the next — is so precisely.

Note: The Rambam Writes in Words, Not Numbers

The Rambam in his times didn't yet use numbers. I don't know why. Perhaps yes, but the Rambam didn't use it. He writes everything in words. I don't have the nerves to say all the words.

Gematria? No, the Rambam uses gematria. He does use gematria, but he writes everything in words, and afterwards he says the gematria. But numbers, symbols for numbers extra, like 1 and so on... In Arabic there are also, it's not the same symbols that we tend to use. Numbers also existed. It could be they did exist, but he didn't use them. I don't know why.

But it makes, whoever thinks about numbers sometimes, it makes it very difficult to calculate when you say words. So I'm not going to say any of the words that are written in the slide. I've transcribed everything to numbers, or even if it says I haven't transcribed, I'll say it in numbers. I don't have the strength to say words.

The answer is that... I can say it in Yiddish, or the real numbers one must say in English. I don't know how to calculate numbers in Yiddish.

The Duration of the Lunar Month: 29 | 12 | 793

The next molad will be the amount of time. Exactly. The duration, the time of a moon is... a half-period, a half-period between the two times. You can call it that, yes? It's **29 days with 12 hours with 793 parts**. Okay? Very simple. 29 and a half days with 793 parts. 29 12 793. I would make such a thing and write it like this: **29 | 12 | 793**. You'll understand by yourselves what I'm saying. Very simple. That's a month.

Remainder of the Lunar Month (Remainder from a Week)

The Rambam's words: When you cast the days of the lunar month seven by seven, which are the days of the week — there will remain one day and twelve hours and seven hundred and ninety-three parts, their symbol is 1-12-793, and this is the remainder of the lunar month.

This is what the Sages did. It's very difficult, because one can't see the conjunction. One must sit for years and calculate and see that it should match precisely. It's known that in modern times they've calculated, one can calculate a bit better. Also, people think it's a simple thing. Go outside, you can't see, and certainly not precisely to the second. It's not a simple thing, one must do various calculations and figure it out.

Modern scholars say, that means it comes out, I see that he wrote here the number, I don't know to the minute. The modern scholars have said, ah, he told me. He said that today it comes out 2.9 seconds, not 3.9 seconds. Yes, it's approximately half a second. Three and a third seconds, and the modern calculation is 2.9 seconds. Very good. So it's 0.4, less than half a second, different from what the scholars say today. Perhaps the time has changed since then. No, there's no difference. It's frighteningly precise, the calculation. It's precise enough for our calendar.

Explanation: How Long a Month of the Moon Is

This is the... how long a month of the moon is. Now comes out a year of the moon. In other words, twelve times that. I don't

need to say all the words that the Rambam says, but it's very simple. As I calculate the calculation your chapter to see, it's very simple. Twelve times that comes out three hundred fifty-four days with eight hours with eight hundred and seventy-six parts. Very simple.

Yes, parts means parts of an hour. Yes? Wouldn't it have been easier to calculate? Wouldn't it have been eight hours with thirty-three and a half minutes? Start getting used to the fact that an hour has one thousand eighty parts, you'll know that eight hundred seventy-six parts is almost a single hour. Yes, but it's not relevant here. You shouldn't know what time it is, you shouldn't know when the month is.

So if it's a leap year, you make thirteen times that, it comes out exactly three hundred eighty-three days and twenty-one hours and five hundred eighty-nine parts. That's how long a leap year is, okay?

The Solar Year and the Difference Between the Solar Year and Lunar Year

This is until now we've spoken about the lunar years. Very good. What has it opened, why did we calculate that twelve times? What is the solar year? How long is it? What does the solar year mean we'll find out in another chapter? He doesn't tell us. It's only now, and also the calculation that he says here he'll say there isn't truly precise. There's another calculation. In any case, the solar year according to what we calculate here is three hundred sixty-five days and six hours precisely.

It comes out, you make a subtraction, and you calculate, three hundred sixty-five with six hours, you take away from that minus, three hundred fifty-four with eight hours with eight hundred seventy-six parts, which is a whole year of the moon. It comes out eleven days, twenty-one hours, and two hundred and four parts. Okay? Very simple things. Anyone can take a paper and calculate it and see that it matches.

What's Relevant: Remainder

Now, what's relevant? This is all basic foundations, basic really plus, minus, times, nobody is confused about this. Now, what's relevant in the whole thing? What's relevant is a thing that in English is called remainder, and the Rambam calls it she'erit, or yisha'er. In other words, remainder means how much does something go in, how much remains after one counts something whole, whole numbers, or whole whatever unit, whatever thing that one wants to divide, how much goes in.

And why is this relevant to us? Because what we're going to, all these calculations are going to tell us which day of the week is Rosh Chodesh. So, I don't know why precisely that's exactly the thing, why can't one simply count days? It seems that counting days is harder, and calculating weeks is easier. I don't know if there's some reason in this, why one wants to know specifically. One must say Rosh Chodesh will be on such-and-such day.

Yes, no, no. It seems that Shabbat everyone always knows, that's not something that's confusing at all. We've learned, it's the holiness of Shabbat, what does that mean? A tradition for each and every one. In short, Shabbat is simple. We place the molad on which day after Shabbat. Not that we place, molad means to know, soon we'll see, through this one knows when is Rosh Chodesh. This isn't so the gabbai should know what to call out, right? This is so that you know when is Rosh Chodesh, it's so many days from the previous Shabbat. This is said so many days after Shabbat, because that way it's easier. Right, right. And also it must be whole days, the molad doesn't go with whole days.

The Calculation of the Remainder of the Lunar Month

So, it comes out, we need to know, basically, if you want to know when a molad should be, it's always four weeks plus a certain amount of days, right? So a while ago he says like this. Tashlich, tashlich means that one multiplies, right? One casts this on that. If one makes tashlich, according to mathematics it means one casts this on that. In other words, one casts it. Yes, that's what he calls it. I don't know exactly why they called it that, one must ask. But tashlich is very simple, one casts that the days of the moon is seven seven, yes? That means you go one seven, another seven, another seven, another seven. It comes out how much remains for you, that means how much remains for you that doesn't go into a week, into a whole week, that's the remainder.

It comes out one day, I'll tell you exactly how much it comes out, yes. In other words, you divide what we just learned earlier, what is exactly the lunar month, twenty-nine days with... how many hours did we say? How big is a moon? With twelve hours, with 793 parts, seven hundred and ninety-three. It stands at twelve. Yes, with so many parts. You'll divide by seven precisely, yes? One can't do anything approximately, one must still know precisely, so it should match.

It comes out twenty-eight. Twenty-eight is seven times four, it's simple. How much remains? There remains one day, twelve hours, with also 793 parts. It's very frighteningly simple. The calculation anyone can do in their head, not complicated at all, because the lunar month is 29, 29, take away from 28, you'll see that it's one day with twelve hours with 793 parts. That's the symbol which is called 1-12-793.

Practical Application: How One Calculates the Next Molad

When will the next month be? The molad adds, first simply adds a month, adds four weeks, and then adds the one day with the remainder. With twelve hours with 793 parts. You'll know which day of the week, yes? You'll know which day of the week, and also which hour will be the molad the next month. It's a great sign you know, the previous month, yes? In other words, if someone is in shul and he remembers what was called out the previous month, it's very easy to know what will be called out this month. It's not complicated at all. And so, in other words, every day the molad moves by how many days? By two days, yes? By one and a half days, so the next day of the week.

Law 4 — Remainder of a Regular Year and Leap Year

The same thing can be done with a whole year. If you know from a year ago when it was called out, you divide a year by seven, now here it depends which type of year you have, right? If the remainder of a regular year, which is twelve months, which we said comes out three hundred fifty-four with eight hours with eight hundred seventy-six parts, you divide that by seven, it comes out, as I calculated the math before I saw it, it comes out, you sent it in, you have fifty whole weeks, the Rambam doesn't say, I'm just saying so, but fifty whole weeks, with, remains the addition four days, eight hours with eight hundred seventy-six parts. That's still the same amount of hours that was there at the end, anyway, right?

Symbol 4-8-876 — Remainder of a Regular Year

For this there's a symbol, the symbols one must remember. With the symbols the Rambam does speak gematria, but it's

also easy to remember if one remembers part of them. It's called 4-8-876. Okay? 4-8-876, that means 4 days 8 hours 876 parts. Yes? That's the remainder of a regular year. In other words, four days with eight hours moved is the molad of the month of Tishrei, for example, this year, from the molad of that year. Four days, of course, plus fifty weeks, right? But the weeks are easy to know, so the novelty is the days. That's when it's a regular year.

Symbol 5-21-589 — Remainder of a Leap Year

A leap year is longer, so one must calculate. I'll say what the Rambam means one should calculate. As we learned earlier, how a leap year is, one says that it's three hundred eighty-three days with twenty-one hours with five hundred eighty-nine parts. It comes out that you divide that by seven, there remains fifty-four weeks, that means four more weeks than a normal year, but a bit more, with five days. And what remains that doesn't go into whole weeks? Whole five days, twenty-two hours, and five hundred eighty-nine parts. That means the same, again, the parts will always be the same as it started, right? That's how much the month has moved from the previous year when it's a leap year.

Law 5 — Calculating the Molad for the Next Month

The Rambam's words: When you know the molad of one of the months, and you add to it 1-12-793 — the molad of the month after it will come out, and you'll know on which day of the days of the week and at which hour and how many parts it will be.

It comes out, says the Rambam, yes, the Rambam will tell us, it comes out all frighteningly simple math. When you know the molad of any month you want, you'll know the molad of any month, you'll add 1-12-793, you'll know the molad of the next month, which day of the week, at which hour, at which part.

Example from the Rambam: Molad Nisan and Molad Iyar

And the Rambam gives an example. For example, that the molad of Nisan was Sunday at hour 17 with 107 parts, with the symbol 1-17-107, yes? One, seventeen, one hundred and seven. Now, add to that 1-12-793, in other words, make simply...

Practical Example: Calculating Molad Iyar from Molad Nisan

And the Rambam gives an example. For example, yes? For example, that the molad of Nisan was Sunday at hour 17 with 107 parts. Which symbol? 1-17-107. Yes? 1, 17, 107.

Now, add to that 1-12-793, yes? In other words, make simply, you don't need to add the month, because the month isn't relevant. You already know, Sunday you already have, four weeks later. In other words, I add to what? I didn't make it here. So I add to what? To 17, what did I say? It's not a... let me say 1 for Sunday, 17, I just know to make it simple, it's not a real way of doing math. What did I write? 107? Yes?

Add what? Add, I'll do it on the next line, because otherwise it gets confusing. I add to that how much? 1-12-793, right? 1, 12, and 9... what does 793 mean I said? 793.

What comes out? After one comes... I actually need to start from earlier. So I need to add... I'll say what I need to do. The Rambam I'll say what I need to do. I need to add to 700, go backwards, right? Because if not I'll need whole numbers. So to 793 plus 107 is how much? 8, 93, 900. Still less than a whole hour, so I know it will be another part. You see that my calculation is correct?

And then to 12, to 17 I'll add 12, I already have more than a whole day, right? More than 24. So how much do I have? I'll add to the next column 1, but here I'll have 5 hours, right? I make it five, and another two days, right? Three days. That means, I need to add two days, because I had approximately a whole day.

It comes out, add two days to Sunday is Tuesday, add five hours. That's the calculation, it's with five hours. Add the parts is the other parts. The Rambam says clearly that I come to the molad of Iyar will be on Tuesday night, you see, my calculation is correct. Tuesday night, five hours at night, means five hours at night, right? Five, still just the beginning of day, and nine hundred parts. The symbol for this will be 3-5-900. Simple. So it's very simple to know the molad of the next month.

Calculating Molad Month by Month and Year by Year

And so on, yes, ah, the same thing if you know one month after another, until the end of the world, the end of the world, yes. That means, if you know the first month of the world, and you just need to calculate month by month, you can do simple things.

The same thing can be done, if one doesn't have the patience to calculate every month, one can go with a year. If you know the molad of one year, and you add the remainder of a year, that means, you know if it's a regular year, the regular remainder that we learned the rules earlier, or a leap year the leap remainder, it will come the molad of the next whole year, and so year after year until the end of the world. Yes?

Molad BaHaRaD – The First Molad of Creation

Now I'll say an interesting foundation. But how do I know when the first molad was to start calculating? All these calculations were that I know when last month the molad was. But how does the whole calculation begin? I know... exactly, I know that now is 5786... what is it now? 5786? That I know. But I don't know more than that.

The Rambam tells you, I'll tell you the secret. It's very simple. 2-5 is the first molad ever. Soon you'll see that one can make it easier. But let's say even with a year, start from the first molad ever, which is the first molad that was because the Almighty didn't need in the world. The molad that was in the first year of creation, that means in year zero, and when was that? I'll tell you when it was.

Question: Creation and Molad BaHaRaD

There's a question about this, there's a question, there's a question that exists in this. I'm just saying the calculation. I'm forgetting about the problem. Through the way the Almighty made the luminaries on the fourth day, it doesn't match. Because that's what I meant when I say there's a question that doesn't match.

But it makes no difference. You must understand clearly that all these calculations aren't because it's so. The whole molad of the commandment is just a calculation. They calculated backwards and it came out that then comes out the first molad. How was it? It's not a question on the act of creation. Yes, it could be many things, but it doesn't make any difference, because nobody knows at all what was then. They say Torah, there's about this the Tosafot, there's about this the commentators who say Torah about this, but regarding the calculation it doesn't matter.

The Calculation of Molad BaHaRaD

How to Calculate the Molad - The Calculation Method

The calculation is, we reckon, go back 5786 years, calculate the molad that was Monday night five hours and two hundred and four chalakim, whose sign is BaHaRaD. Everyone who once learned this, we spoke about the molad of tohu, as it's sometimes called, which is BaHaRaD, the second day and five hours, 5, and 204 chalakim. Start from then and add a month, a year, until you come to today, you'll know when today's molad is.

In other words, one needs to know nothing to know today's molad except for molad BaHaRaD, plus 29 days 12 hours 793 chalakim, basically times as many months as have passed. You also need to know how many simple years there were. But that's a problem. So, because we only know the years, yes?

Rules in Calculation: Hours, Days, Minus Weeks

So the Rambam comes and says a general rule in the calculation, which we already did when we showed the previous calculation, we already followed the Rambam's halacha. The Rambam says a rule, why he writes it specifically here I'm not sure, all these calculations, **when you add a remainder to the molad**, says the Rambam, **when you add a remainder with a remainder**, when you add one remainder with another remainder, you must never forget that it should become more than a whole number of whatever the whole of that is.

So therefore, **when there accumulates from the chalakim one thousand and eighty**, there comes out a thousand and eighty chalakim, you have a whole hour, you must add that to the count of hours, otherwise your calculation won't work. Right, because that's the whole point, to know how many hours it is.

The same thing, **when there accumulates from the hours twenty-four**, as we learned before, a day is twenty-four hours, you'll add a completion of days, you'll make a whole day, and it's added to the days.

And when it comes to more than seven days, you'll subtract it, because we don't want to know at all how many days, **for we are not calculating regarding the count of days**. The count of days we know ourselves as it were, but for some reason the calculation goes. The moment it's so, there's a difference, right? When a whole hour comes, you add an hour to the calculation. A whole day comes, you add. A week comes, you delete it, because the week is basically a rolling thing, it starts over again to zero. That's how to do the calculations. Yes.

The 19-Year Cycle - Two Reasons

Says the Rambam, but I've now told you how to calculate year after year after year from BaHaRaD, from the first molad that was once in the world. The problem is this: how do I know which year was a simple year, which was a leap year throughout the entire world? One must now state, in order to know the molados, although we're not yet learning at all the laws of intercalating the year, there will be another whole chapter to figure out all the laws to understand how one calculates this. But since the calculation of which day of the week the molad is depends on whether it's a simple year or a leap year, he must now state the rules of intercalating the year, how it works. And the Rambam will say briefly, I mean in other later chapters he'll explain it better.

Halacha 10: Every Nineteen Years

The Rambam says thus: every nineteen years, and what's the point of this? First of all, you'll know whether it's simple or leap. And secondly, afterwards one will know a larger cycle, that the cycle of nineteen years, you won't need to calculate, it will be much easier the calculation, because instead of calculating every year, 5786 years from 3342 at creation, you'll be able to calculate nineteen years. You'll only need to know which year in the cycle we're holding, and you can start from there, just as one can only start from after Sunday, because one doesn't need to know more than that.

The Rambam says thus: **every nineteen years**, every nineteen years, of which seven of them are leap and twelve are simple, is called a machzor. Machzor means a cycle, literally, right? There's a cycle of nineteen years, seven of them are leap years, and twelve of them are simple years.

Why Did We Rely on This Number - Why Specifically Nineteen?

The Rambam asks, or he explained the Rambam, and we'll explain this better, but I see he has a nice picture, I want to show it to you. The cycle of nineteen years, why, **why did we rely on this number**, that is, why was the number nineteen decided upon? What's so good about nineteen? Why use the number nineteen?

The Rambam says thus, **because at the time**, this is actually the reason why there is such a cycle. It's relevant to us because we're going to use it for our purpose now, but this is actually the reason in the most general way. The answer is that, **when you gather the count of days of twelve simple years and seven leap ones with their hours and chalakim**, and that means, let's try to read how the Rambam says it. **And the completion of every thousand and eighty chalakim an hour**, that means, let's take, you want to arrive, I'll say where you want to arrive.

You want to arrive basically at a place where after the cycle the sun and moon stand as close as they can possibly be. Exactly completely they'll never be, but almost completely one hundred percent on a whole day, on a whole thing.

Says the Rambam, do this: take together the calculations that I've now told you, do it thus: twelve simple and seven leap, comes out, if I remember, two hundred thirty-five months exactly. And it does this: it adds... that is, every time you have a thousand eighty whole chalakim, you make it an hour, right? That's what one does. Ah, from this he made the introduction actually. And every twenty-four hours you'll make a whole day.

It comes out, you'll see that there remains a total of nineteen years of solar years. How many times, in other words, when you add, let's show here the calculation in a second, you'll already see, **that all the years are three hundred fifty-six hours equally**, and there doesn't remain, there does remain something left over, a remainder, there shouldn't remain anymore

The Foundation of the 19-Year Cycle - A Simple Explanation

Speaker 1:

But this is the closest to being. I just want to show the chart, because these are the simplest things. One can say it in a simple way. That is, you can say, what the Rambam basically says is, divide three the only way you come, or the closest you come to having that 365 should go into 354, is through the

calculation of 11, that 235 months comes out approximately the same. That's more or less the calculation.

But you can see in a simple way here what's going on. Why? Because one can say that every solar year is longer than the lunar year by ten hours with ten hours. Ten days, twenty-one hours, and two hundred and four chalakim.

Step-by-Step Calculation of the Cycle

It comes out, you'll calculate after each year how much the moon still owes, so to speak, to the sun. Yes?

So after one year, ten days. After two years, twenty-one days. After three years, thirty-two days. Already holds a whole month, right? More than a whole month. Okay, we've added a month over the third year.

After four years, further. But there still remains three extra days, because we only added twenty-nine days. A month over is always 29 days. Anyway, or not always, yes, according to our calculation it is. So, still remains left over. So, still owing.

Hi, hello. It comes out the fourth year you hold fourteen days, and the fifth year twenty-four days. Sixth year already thirty-five days, okay, you have a whole month, you make a month over.

Seventh year you hold at seventeen days. The eighth year you owe twenty-eight days, okay, you make here also a month over, which is not almost a whole month, although now the solar year owes a day.

The ninth year you have nine days, the tenth day twenty days, the eleventh year thirty-one days further you make a month over.

The twelfth year twelve days, the thirteenth year twenty-three days, the fourteenth year thirty-four days, further you have a whole month, you make another month over.

The fifteenth year fifteen days, sixteen days, sixteen days, sixteen days, thirty-seven days, a lot, you make another month over.

The eighteen days, eighteen days, the nineteenth year exactly twenty-nine days. So it comes out, this is the only time you have less than a whole day left over. Right?

That is, after you've added the month over, make the nineteenth year a month over, it comes out, you see the number zero? This is the only year? That means, go further that it won't help to add twenty. In short, you can never become better than this, perhaps perhaps make a cycle of a thousand, I don't know how many years. But you'll arrive at zero.

Finally, the solar year, after adding a month, they met on the same day. There remains over an hour, true, an hour, one whole hour with four hundred eighty-five chalakim, remains over. That far one couldn't make hours between the sun and the moon, but after nineteen years you remain over with zero days that one owes to the other.

For this is the cycle of nineteen years, which simply even schoolchildren can understand. Agreed?

Speaker 2:

Yes.

Speaker 1:

Very very very good.

The 7 Leap Years and the Remainder of the Cycle

All Months Are Lunar Months

It turns out, now it comes out, in such a cycle, says the Rambam, **all the months are lunar months**. That is, when one looks generally at the whole cycle of nineteen years, you don't need to get confused at all. All months are lunar months of 29 days 12 hours 793 chalakim, all years are solar years of three hundred sixty-five days, except one hour. Well, one hour.

The Seven Leap Years

It comes in the seven years, which seven years are over? It's exactly our chart that we just saw. You want to know, the sign is gimel yud, I don't remember, there's a verse a way to make a sign for this. In any case, the third, the sixth, the eighth, the eleventh, the fourteenth, the seventeenth, and the nineteenth, these are the seven leap years.

This is every year in this cycle when and every, whether it's a simple or leap year, it's not relevant from our calculation now, because we're going to calculate nineteen years at once, it is relevant, because we need to know whether the year or the previous year was a leap year. Right, one must know, sorry, I made a mistake, one must know, in order to know which day is Rosh Chodesh, one must also know which years in the cycle we're holding. A whole cycle isn't relevant, but the cycle we're holding, you must know how many years were already leap, in order to know whether you need to calculate thirteen months or twelve.

Remainder of the Cycle - 2 Days 16 Hours 595 Chalakim

Says the Rambam, here I haven't written the math, but we'll believe him that it's correct, it comes out thus, when you'll take together the remainder of each year, yes, how much... So now the question is thus, we said we want to know only the remainder, right? That is how much remainder regarding the weeks, the weeks don't become complete here, the weeks continue in their order.

So take together how much is the remainder of each year. Twelve times simple years, we learned a simple year has a remainder of 4 days 8 hours 876 chalakim, right? So let's write thus: 12 times 4 days 8 hours 876, right? 12... it's a bit backwards, but whatever. 12 times, sorry, 4 days plus 8 hours plus 876, right? 12 times this comes out how much? I don't know.

And you'll do seven times, sorry, this is twelve years, right? Afterwards you'll do seven times the leap years, which are what? 5 days 21 hours 589 chalakim, comes out a total.

And afterwards you'll divide the number by seven, right? You'll divide, I don't know what the number is, one can calculate it on their calculator in a minute. You'll divide the number by seven, there will be the remainder. What is the remainder? The remainder will be 2, 16, and 595. And this is the remainder of the cycle.

The remainder after each cycle is the molad two days with sixteen hours with five hundred ninety-five chalakim moved from the previous cycle. So one who remembers nineteen years ago when the molad was, he only needs to add so many days and so many hours and so many chalakim, whose sign is 2-16-595. This is an important sign, because this will be used very strongly for the calculations we're now going to make, 2-16-595. This is the remainder of the cycle.

It comes out, if you know a molad from the beginning of a cycle, you add 2-16-595, comes out the molad of the next cycle. That is, let's say the first molad of a cycle. The same thing every molad of every cycle until the end of all the world. And

we already know that the first cycle was BaHaRaD, and this is the molad of Tishrei.

You know a rule, the molados that we call the first, they are for the month of Tishrei. Although according to other things one counts from Nissan, no difference, the calculations of intercalating the year and molad one begins from Tishrei.

Practical Application - How to Calculate the Molad of a Specific Year

So in short, if you'll do thus, if you know the rules, you can calculate the molad of every year and every month according to the calculation. How? Very simple.

Example: Calculation of Year 5786

Calculate years of creation, for example, this is 5786. I can't show the math, but it's very simple. I should have shown it yes. That is, in other words, let's say the year is... I need to open a calculator, and I'll write down what he says.

The year is 5,786. First divide it by 19. Comes out how much? 304. I don't want to multiply it by 90, I want to know how much remains over. 304. It makes 304 cycles of nineteen years. It comes that there have already been 304 cycles from the beginning of the creation of the world.

And now which year are we holding in the cycle? You'll know how many cycles there were. I need to measure the remainder, but my calculator here doesn't do remainders. I need it to do remainder. Let's do it and you'll say the remainder. What did we say? 5786 divided by 19. What is remainder? There is, regular calculators do fractions and they're not interested in it. It comes out that the remainder is ten, so he says. It comes out that we're holding in the tenth year of the cycle.

Afterwards you'll do what? You'll add 2-16-595 from each cycle, three hundred and four times 2-16-595 from... from what? From creation of the world? From BaHaRaD? Right? How much is that? Can I do it? I won't understand what needs to be done.

Afterwards, each simple year, what does it mean I look now in the tenth year? What kind of year is this? A simple year, true? It's not? It comes out that it's in the tenth year, you need to calculate three leap years, and... how many in seven simple years? Right? It calculates for each simple year to add 4 days 8 hours 876 chalakim, for each leap year to add 5 days 21 hours 589 chalakim, you take everything together, afterwards you complete the chalakim to hours, the hours to days, the days to seven seven, what remains over, this is the molad of the next year, that is Tishrei 5787. Right?

Molad of Each Month

And the molad will be the molad of the month of Tishrei. How do you know from Cheshvan nothing? You add 1 day 12 hours 793 chalakim. Tishrei is Cheshvan. And so on until the end of all the world.

How One Calculates the Molad for Each Month and Year

You take everything together, afterwards you complete the chalakim to hours, the hours to days, the days to seven seven, what remains over, this is the molad of the next year, that is Tishrei 5787. Right? And the molad will be the molad of the month of Tishrei.

How do you know from Cheshvan nothing? You add 1 day 12 hours 793 chalakim. Tishrei is Cheshvan. And so on until the end of all the world you'll know very simply the molad for the months.

For the years you can also, it will take very long. What one does is, one calculates cycles, and afterwards within the cycle simple and leap years, and within the year 1 day 12 hours 793 chalakim, you know exactly when the molad is of the year.

The Calculation Is One Hundred Percent Calculation - No Sighting Necessary

This is all a calculation, this has nothing to do with looking. One doesn't need to look even once at the moon to know the whole thing. This is one hundred percent calculation.

The moon follows approximately, right? This is the calculated average, the moon follows enough that it doesn't go out too far after a whole year. Yes. Right. That is, there never comes out any difference regarding the moon. There are inaccuracies in many places in this calculation, but not our topic.

In any case, the calculation is exactly correct, and thus one knows when the molad is. The one who made your calendar that your gabbai uses to announce the month, he made this calculation, and according to this he announces the molad. He never looked at the molad, because if he'll look he'll see other things. No, not other things, again, not exactly. This is the molad that one knows.

Introduction to the Next Chapter: Dechiyos — From Molad to Rosh Chodesh

After you know the molad, you would think, I'll say the introduction to the next section, you would think that you know when Rosh Chodesh is? No, you don't know.

Because Rosh Chodesh is usually made, it's ideal, as if, now seemingly, the molad... right. Seemingly, no, no, I'm not talking now about establishing it according to sighting. Let's now talk even about what the establishment is today.

There are things called dechiyos, there are four other dechiyos, which at that time, usually, as if originally one makes the molad Rosh Chodesh on the molad, but there are various rules where we make the molad after Rosh Chodesh, and if you will add to the calculation those rules, you will know when Rosh Chodesh is as well.

And this is the next chapter where we learn the dechiyos.