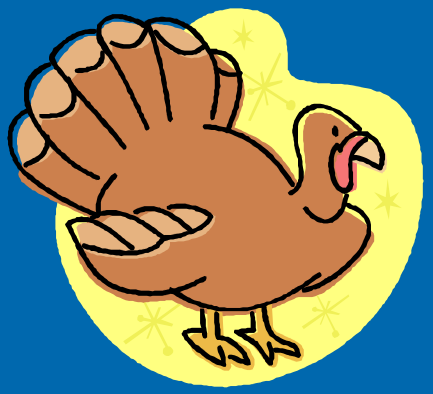
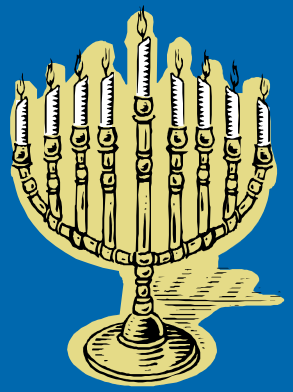




Thanksgivukkah!

A once in a lifetime event!

Summarized by Rabbi Seth Goldstein

The Jewish Calendar

- A lunisolar calendar
- Lunar months (based on the moon)
- Solar year (based on the sun)
- While we are told in the Torah to mark time by the “new moon,” we are also told that certain holidays have to fall in certain seasons.

The solar year

- Amount of time it takes for the Earth to revolve around the sun.
- 365 days
- 5 hours
- 49 minutes
- 12 seconds
- Approx. 356 ¼ days!

The lunar year

- Uses a synodic month—calculating the month based on the phases of the moon. (new moon to new moon)
- That length of time can vary between 29 days, 6 ½ hours and 29 days, 30 hours.
- So we use the mean: 29.53 days
- 29.53 x 12 = 354 1/3 days in a year

Did you get that?

- 365.25 days in a solar year
- 354.36 days in a lunar year

- 365 - 354 = 11 day difference between the two years.

Houston, we have a problem!

So, what do we do?

- Meton of Athens in the 5th century BCE noticed something: 19 years is almost equal to 235 lunar months.
- Approx. 6900 days
- This 19 year period is called the Metonic cycle.

Leap years!

- Without correction, the Jewish calendar will shift 11 days every year, or 1 month every 2.5 years.
- So, using the Metonic cycle, the Jewish calendar adds a “leap month” 7 times over the course of the cycle. Years 3, 6, 8, 11, 14, 17 and 19 are leap years with 13 months.
- Which month do we add????

5774 is a leap year

- This spring our holidays should “even out” because we add the leap month of **Adar II** in March
- 5774 is the 17th year of a Metonic cycle.
- How do we know?
- 5774/19 = 303 R**17**
- (In two years it will be 5776. 5776/19=304)

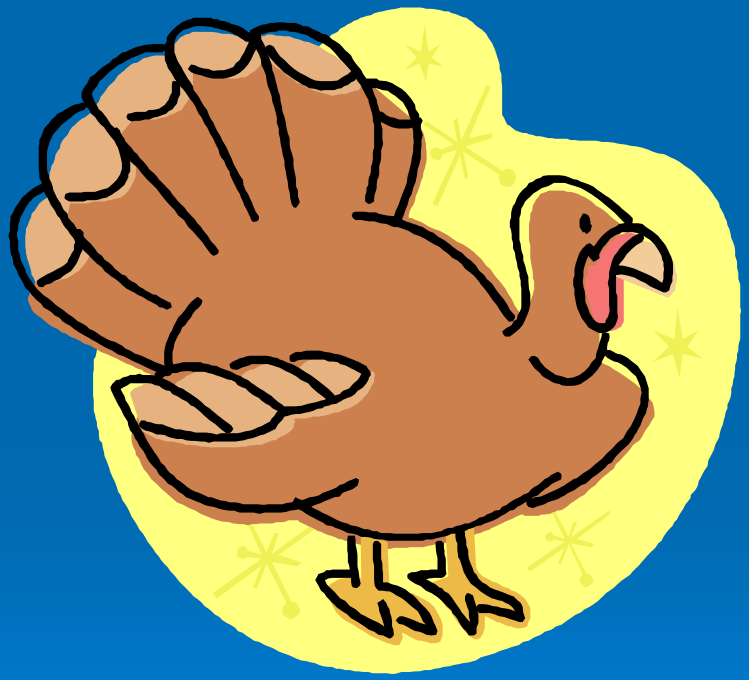
(A brief tangent about Yom Kippur)

- The calendar is also “fudged” a little bit because our ancient sages determined that Yom Kippur should never fall on Friday or Sunday. (Too inconvenient for Shabbat)
- So an extra day is added sometimes to ensure that Rosh Hashanah only falls on a Monday, Tuesday, Thursday or Saturday.

2013

- This is why the calendar shifts from year to year, over the course of a 19 year cycle, and why the holidays are so “early” this year. (Yes, in 2032, 19 years from now, Rosh Hashanah will fall on Sept. 6—which is actually Labor Day Monday!)
- But, these are the earliest they will ever fall in the cycle. This is the earliest Hanukkah will ever fall.

Late Thanksgiving



- And, by coincidence, this is the latest Thanksgiving will ever fall.
- Thanksgiving is the fourth Thursday in November and this year, with Nov. 1 on a Friday, Nov. 28 is the latest Thanksgiving.

But…

- The Gregorian calendar cycles every 7 years.
- The Jewish calendar cycles every 19 years.
- Shouldn’t the holidays meet every 133 years (19 x 7)?

Well…

In theory, yes. And the dates overlapped in 1861. However, the date of Thanksgiving was only fixed by Abraham Lincoln in 1863. So this would be the first time they overlap.

(In 133 years, Hanukkah falls on Nov. 27…but it's a Monday)

Wait, what about 1888?

- Ok, ok…yes, Hanukkah and Thanksgiving did overlap in 1888.
- When Lincoln fixed Thanksgiving, he did it on the LAST Thursday of the month.
- In the 1940s, Congress changed it to the FOURTH Thursday of the month.
- In 1888, Thanksgiving was on the fifth Thursday and overlapped with Hanukkah.
- But it won't happen again because Thanksgiving was moved up and…

Calendar drift…

- Back to math for a second.
- The mean Hebrew year is 365.2468 days (29.5 x 235 / 19)
- The mean Gregorian year is 365.2425 days.
- In short, the Jewish calendar is “drifting” 1 day every 231 years.
- Because of this drift, Hanukkah and Thanksgiving will never meet again!

A technical clarification…

- Also, when we say meet, we mean that the first full *day* of Hanukkah falls on Thanksgiving Day, like this year.
- [Remember a Jewish day runs from sundown to sundown]
- In 2070, the first *night* of Hanukkah will fall on Thanksgiving Day.
- Close, but…

What about in 79,000 years?

You may have heard that this won't happen again until the year 79811.

Mathematically that is true if you account for the calendar drift, that's how long it will take the Hebrew calendar to cycle fully through the Gregorian calendar.

BUT THIS WON'T HAPPEN BECAUSE THE HOLIDAYS NEED TO FALL IN THE RIGHT SEASON!

At some point in the future, someone will need to make a correction…