

**JEWISH CALENDAR TUTORIAL WORKSHEET 1 (2000)**

**YEAR BEING CALCULATED: 2000**

**PART I: CALCULATION OF THE DAY OF THE WEEK FOR THE MOLAD**

**1.**

STARTING DATE YEAR: 3761 B.C.

STARTING DATE MOLAD OF TISHRI: OCTOBER 7 or SEPTEMBER 37

STARTING DATE EXACT TIME: D2 H5 P204

**2.**

YEAR BEING CALCULATED: 2000

**3.**

THE DIFFERENCE IN YEARS:

$3761 - 1 + 2000 = 5760$  YEARS

[Comment: When calculating the molad for A.D. years, always subtract 1 because there is no "Year 0" in the "B.C. - A.D. scale."]

**4.**

CONVERT THIS DIFFERENCE INTO THE NUMBER OF 19-YR CYCLES

PLUS REMAINING COMMON YEARS AND LEAP YEARS:

$5760 / 19 = 303$  cycles plus a remainder of 3 years

The sequence of leap years today is: 3, 6, 8, 11, 14, 17, 19

Therefore the remainder of 3 years = 2 Common Years + 1 Leap Year

**5.**

CALCULATE THE DIFFERENCE BETWEEN THESE TWO DATES TO FIND THE CORRECT DAY OF THE WEEK FOR THE MOLAD.

COMMENT: For calculation purposes turn all periods of time into "Parts". The numbers will be larger, but the calculating processes will be much easier. In large numbers every 3 digits are separated by commas for easier recognition of the numbers.

See also the Data File for the actual data needed here for the calculations.

**6.**

FIRST CONVERT ALL PERIODS OF TIME INTO PARTS.A.PER CYCLE: A Jewish 19-Year Cycle exceeds a full number of weeks by 2 Days 16 Hours 595 Parts. This is written as 2D 16H 595P.

THUS:  $2D = 2 \times 24 = 48$  HOURS plus 16 HOURS = 64 HOURS

$$64 \times 1080 = 69120 \text{ PARTS plus } 595\text{P} = 69,715\text{P}$$

B.PER COMMON YEAR: A common year exceeds a full number of weeks by 4 Days 8 Hours 876 Parts. This is written as 4D 8H 876P.

$$\text{THUS: } 4\text{D} \times 24 = 96\text{H plus } 8\text{H} = 104\text{H}$$

$$104 \times 1080 = 112320 \text{ PARTS plus } 876\text{P} = 113,196\text{P}$$

C.PER LEAP YEAR: A (Jewish) leap year exceeds a full number of weeks by 5 Days 21 Hours 589 Parts. This is written as 5D 21H 589P.

$$\text{THUS: } 5\text{D} \times 24 = 120\text{H plus } 21\text{H} = 141\text{H}$$

$$141 \times 1080 = 152280 \text{ PARTS plus } 589\text{P} = 152,869\text{P}$$

**7.**

NOW WE CAN START WITH THE CALCULATIONS FOR OUR YEAR.

A. FOR THE NUMBER OF CYCLES:

$$303 \times 69,715\text{P} = 21,123,645\text{P}$$

B. FOR THE COMMON YEARS:

$$2 \times 113,196\text{P} = 226,392\text{P}$$

C. FOR THE LEAP YEARS:

$$1 \times 152,869\text{P} = 152,869\text{P}$$

**8.**

TOTAL UP THESE 3 AMOUNTS OF TIME:

$$21,123,645 + 226,392 + 152,869 = 21,502,906\text{P}$$

**9.**

CONVERT THE RESULT BACK INTO "WEEKS, DAYS, HOURS, PARTS":

$$21,502,906 / 1080 = 19,910 \text{ HOURS plus } 106\text{P}$$

$$19,910 / 24 = 829 \text{ DAYS plus } 14\text{H}$$

$$829 / 7 = 118 \text{ WEEKS plus } 3\text{D}$$

**10.**

FROM THIS RESULT DISCARD THE FULL NUMBER OF WEEKS:

THUS THE RESULT IS: 3D 14H 106P

**11.**

ADD THIS REMAINDER TO THE STARTING DATE:

D2 H5 P204 plus 3D 14H 106P = D5 H19 P310

**12.**

IF THE TOTAL IS GREATER THAN 7 DAYS, THEN DISCARD 7 DAYS, OTHERWISE KEEP THIS RESULT: D5 H19 P310

**13.**

THE RESULT YOU HAVE IS THE DAY OF THE WEEK AND THE EXACT TIME OF THAT DAY FOR THE JEWISH MOLAD OF TISHRI FOR THIS YEAR.

**14.**

ENTER THE RESULT HERE IN THE FORMAT: D H P: D5 H19 P310  
THIS IS EQUAL TO: THURSDAY, 1:17:13 p.m.

[Comment: Day 1 = Sunday, Day 7 = Saturday; H0 = 6:00 p.m., H6 = midnight; H18 = noon, etc.]

You have now completed the first part of the calculation of the Molad for the year 2000 A.D. That wasn't very difficult was it? Make a note of the HOURS and PARTS in this result. (i.e. the H19 P310)

[Comment: In programs that reckon days from midnight to midnight this will appear as H13 P310.]

Now you are ready to proceed to the second part of the Molad calculation.

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