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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 = 2x24 = 48 HOURS plus 16 HOURS = 64 HOURS

64 x 1080 = 69120 PARTS plus 595P = 69,715P

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.

THUS: 4D x 24 = 96H plus 8H = 104H

104 x 1080 = 112320 PARTS plus 876P = 113,196P

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.

THUS: 5D x 24 = 120H plus 21H = 141H

141 x 1080 = 152280 PARTS plus 589P = 152,869P

7.
NOW WE CAN START WITH THE CALCULATIONS FOR OUR YEAR.

A. FOR THE NUMBER OF CYCLES:

303 x 69,715P = 21,123,645P

B. FOR THE COMMON YEARS:

2 x 113,196P = 226,392P

C. FOR THE LEAP YEARS:

1 x 152,869P = 152,869P

8.
TOTAL UP THESE 3 AMOUNTS OF TIME:

21,123,645 + 226,392 + 152,869 = 21,502,906P

9.
CONVERT THE RESULT BACK INTO "WEEKS, DAYS, HOURS, PARTS":

21,502,906 / 1080 = 19,910 HOURS plus 106P

19,910 / 24 = 829 DAYS plus 14H

829 / 7 = 118 WEEKS plus 3D

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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