

Symmetrical Leap Year Pattern for 293-Year 7-Day Leap Week Cycle

Year is long only if the remainder of $(52 \times \text{Year} + 146) / 293$ is less than 52.

(If the remainder for a given long year is less than 33 then the next long year will be 6 years later, otherwise 5 years later.)

Cycle Mean Year = $365+71/293$ days = 365 days 5h 48m 56+152/293s = about 365.242320819112628 days = about 365 days 5:48:56.519

Legend: • = short year, | = Long year

Primary sub-cycle: ••|•••••|•••••|•• = 17 years with 3 long, mean year $365+4/17$ days = 365 days 5h 38m 49+7/17s = about 365.235294117647059 days = about 365 days 5:38:49.412

Second sub-cycle: ••|•••••|•• = 11 years with 2 long, mean year $365+3/11$ days = 365 days 6h 32m 43+7/11s = about 365.2727272727273 days = about 365 days 6:32:43.636

45	79	45	79	45
	•• ••••• ••••• ••		•• ••••• ••••• ••	
•• ••••• ••••• ••	•• ••••• ••••• ••	•• ••••• ••••• ••	•• ••••• ••••• ••	•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••	•• ••~••~ ••~••~ ••
	•• ••~••~ ••~••~ ••		•• ••~••~ ••~••~ ••	

Symmetrical Leap Year Pattern for 45-Year 7-Day Leap Week Cycle

Year is long only if the remainder of $(8 \times \text{Year} + 22) / 45$ is less than 8.

(If the remainder for a given long year is less than 5 then the next long year will be 6 years later, otherwise 5 years later.)

Cycle Mean Year = $365+11/45$ days = 365 days 5h 52m 0s = about 365.24444444444444 days

45
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••

Symmetrical Leap Year Pattern for 79-Year 7-Day Leap Week Cycle

Year is long only if the remainder of $(14 \times \text{Year} + 39) / 79$ is less than 14.

(If the remainder for a given long year is less than 9 then the next long year will be 6 years later, otherwise 5 years later.)

Cycle Mean Year = $365+19/79$ days = 365 days 5h 46m 19+59/79s = about 365.240506329113924 days = about 365 days 5:46:19.747

79
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••
•• ••~••~ ••~••~ ••