

Pipes and Cisterns & Clocks and Calendars

Pipes

Time to fill when they work together ($y > x$)

$$\frac{xy}{y-x}$$

Pipe A fills in x hrs
Pipe B empties in y hrs

Pipe A fills in x hrs
Pipe B fills in y hrs

When two pipes fills and one pipe empties, then

$$\text{Net filling rate} = (F_1 + F_2 - E)$$

Time to fill when they work together

$$\frac{xy}{x+y}$$

No. of times they meet in a day

$$\frac{1140}{\frac{720}{11}} = 22$$

Hour hand meets minute hand after

$$\frac{720}{11} \text{ mins}$$

In one minute the minute hand gain $5\frac{1}{2}^\circ$ more than hour hand

In one minute the minute hand moves 6°

In one minute the hour hand moves $\frac{1}{2}^\circ$

Clock

Calendar

100 year = 5 odd days

400 years or multiple of 400 years = 0 odd days

Odd-Days

Months

Jan → 3
Feb → 0/1
March → 3
April → 2
May → 3
June → 2
July → 3
Aug → 3
Sept → 2
Oct → 3
Nov → 2
Dec → 3

Ordinary Year = 1

Leap Year = 2

Total no. of days = 365

Total no. of days = 366

Trace the Mind Map

► First Level ► Second Level ► Third Level