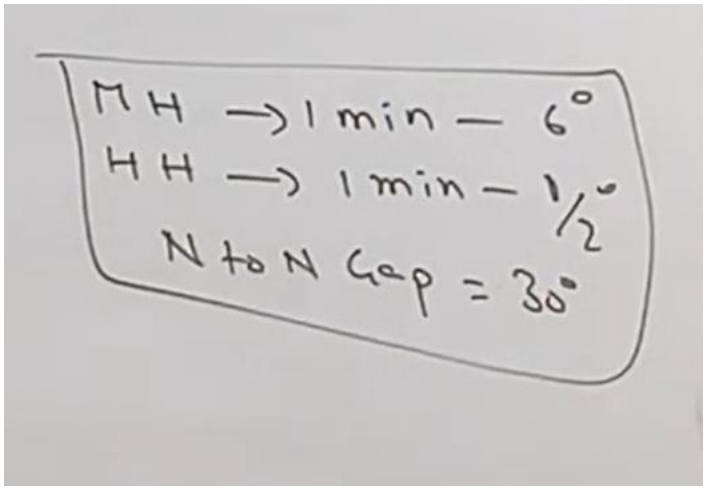
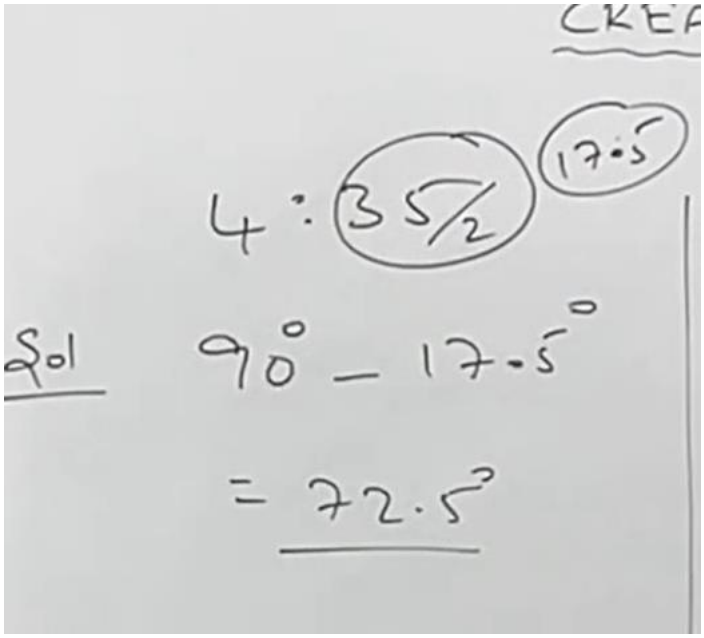
Clocks





CREATE U Aptitude (in Telugu)

Clocks

11 : 15/2

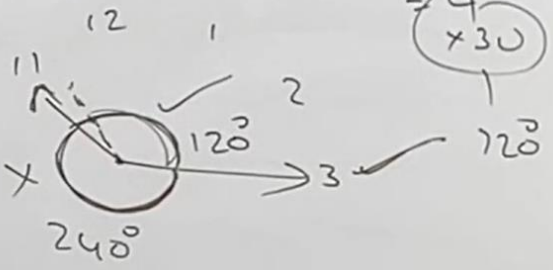
$\Rightarrow 120^\circ - 7.5^\circ$

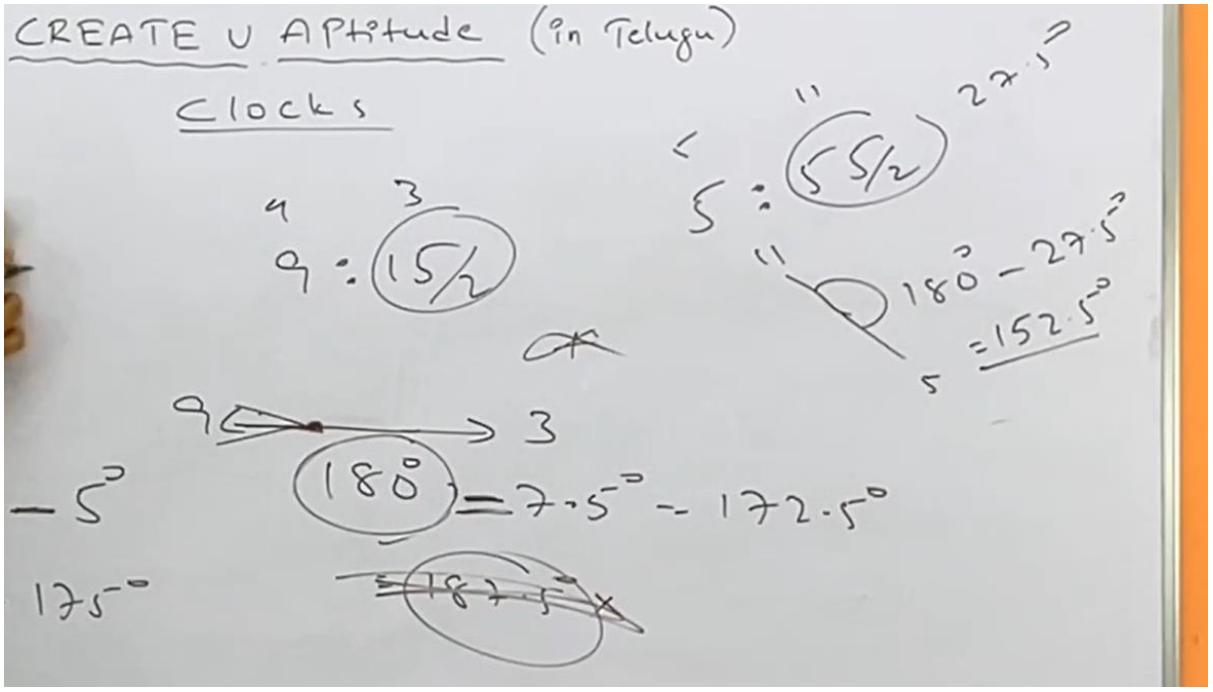
$= 112.5^\circ$

11 - 3 = 8 × 30

= 240

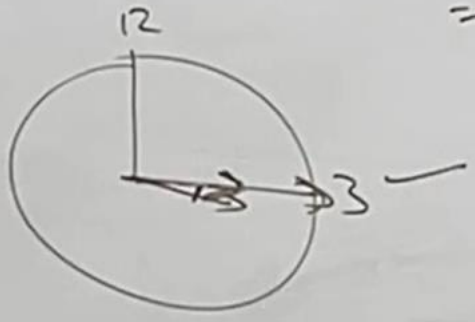
12 - 8 = 4 × 30 = 120°





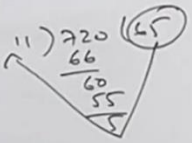
Clocks

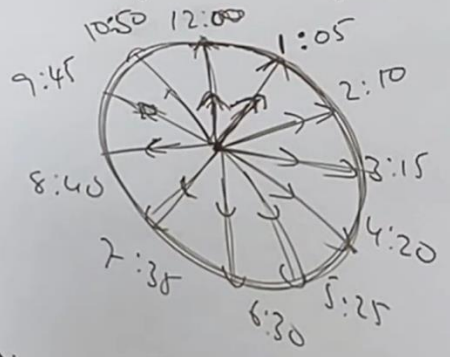
$3:15 = \frac{15}{2} = 7.5^\circ$



Clocks

(2) At what time b/w 3 & 4, two hands of a clock meet / coincide / overlap / overtake / collide (Angle 0°) / Straight line facing same direction.





12 hrs = 11 times

11 Times ⇒ 12 × 60 min

11 Times ⇒ 720 min

1 Time ⇒ $\frac{720}{11}$ mins

1 Time ⇒ $65\frac{5}{11}$ mins

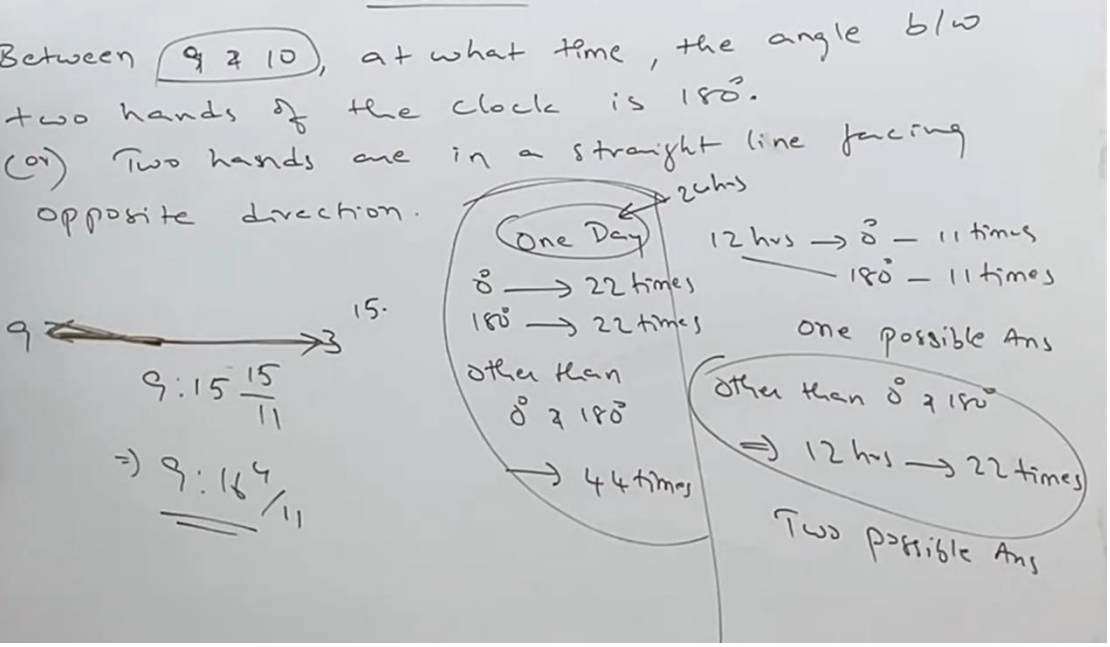
Note: Two hands of the clock meet for every $65\frac{5}{11}$ mins

CREATE U Aptitude (in Telugu)

Clocks

⑧ Between 9 & 10, at what time, the angle b/w two hands of the clock is 180°.

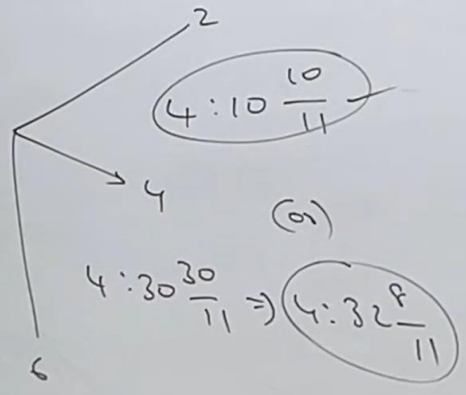
(or) Two hands are in a straight line facing opposite direction.



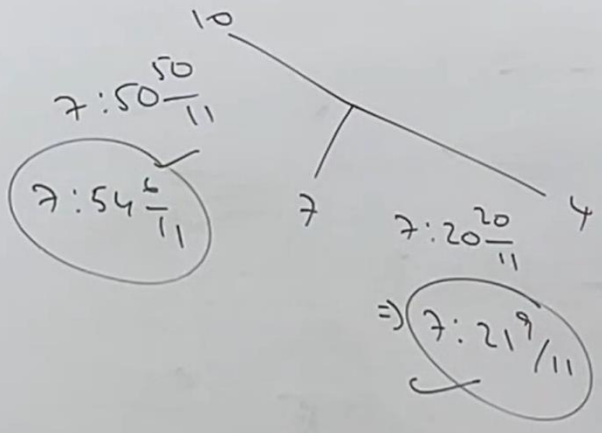
CREATE U Aptitude (in Telugu)

Clocks

⑧ Between 4 & 5, at what time, the angle b/w two hands of the clock is 60°.



(8) Between 7 & 8, at what time, the angle b/w two hands of the clock is 90°. / Right Angl

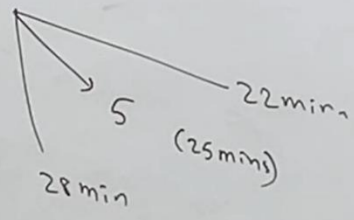


Clocks

At what time b/w 5 & 6 o clock, are the hands of a clock 3 min apart.

(1) 5:22 22/11 × 2
⇒ 5:24

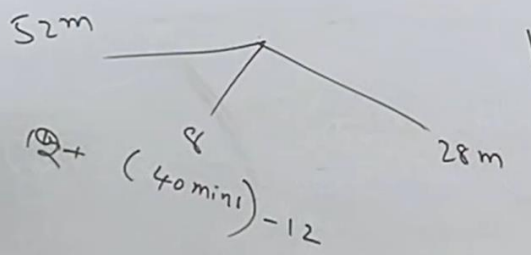
(2) 5:28 28/11 × 2
⇒ 5:30 6/11



Clocks

At what time b/w 8 & 9 o'clock are the hands of a clock are having an angle 72°

$\Rightarrow 72/6 = 12$ mins



$8:28\frac{28}{11}$

$\Rightarrow 8:30\frac{6}{11}$

$8:52\frac{52}{11}$

$\Rightarrow 8:56\frac{8}{11}$

Clocks

In a day, how many times two hands of a clock are in a straight line

Sol:- 180° ⟷ 22 times

0° → + 22 times

44 times

Clocks

In a day, how many times two hands of a clock are in a straight line

Sol:- 180° ⟷ 22 times ✓ (opp) - 180°

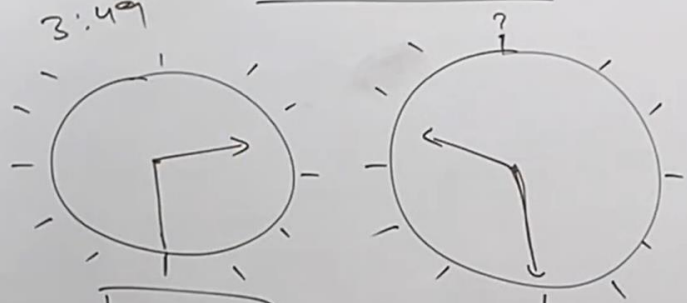
0° → + 22 times ✓ (same) - 0°

44 times

CREATE U Aptitude (in Telugu)

Clocks

Mirror Images



2:30

9:30

12:00
3:00
9:00

12:00
5:00
7:00

11:60
2:30
9:30

11:60
3:47
8:11

12:60
2:30
9:70

11:60
2:30
9:30

CREATE U Aptitude (in Telugu)

Clocks

If two hands of the clock meet for every (Wrong Meeting Time) 64 mins how many minutes will the clock lose / gain in a day?

Sol Two hands of the clock meet for every $65\frac{5}{11}$ mins (Correct Meeting Time)

$$\Rightarrow \text{Loss} = \frac{\text{Dif}}{\text{Wrong Time}} \times 24 \times 60$$

$$= \frac{65\frac{5}{11} - 64}{64} \times 24 \times 60$$

$$= \frac{1\frac{5}{11}}{64} \times 24 \times 60$$

$$\frac{\frac{16}{11}}{64} \times 24 \times 60$$

$$\Rightarrow \frac{16}{11 \times 64} \times 24 \times 60 = \frac{360}{11} = 32\frac{8}{11}$$

$\Rightarrow 32\frac{8}{11}$ mins

CREATE U Aptitude (in Telugu)

Clocks

If two hands of the clock meet for every 60 mins how many minutes will the clock lose / gain in in an hour ?

Sol Two hands of the clock meet for every $65\frac{5}{11}$ mins

Correct Meeting Time

$$\Rightarrow \text{Loss} = \frac{\text{Dif}}{\text{Wrong Time}} \times 60 \qquad \frac{5\frac{5}{11}}{60} \times 60$$

$$= \frac{65\frac{5}{11} - 60}{60} \times 60 \qquad = \frac{60}{11 \times 60} \times 60$$

$$= 60/11 = 5\frac{5}{11}$$

$$70 - 65\frac{5}{11}$$

$$\Rightarrow 4\frac{6}{11}$$

$$10 - 3\frac{3}{4}$$

$$6\frac{1}{4}$$

$$88 - 24\frac{8}{15}$$

$$\Rightarrow 63$$

Clocks

If two hands of the clock meet for every 70 mins how many minutes will the clock lose / gain in in an hour ?

Sol Two hands of the clock meet for every $65\frac{5}{11}$ mins

$\Rightarrow \frac{\text{Dif}}{\text{Wrt}} \times 60$

$= \frac{70 - 65\frac{5}{11}}{70} \times 60$

$= \frac{4\frac{6}{11}}{70} \times 60$

$\frac{5\cancel{0}}{11 \times 7\cancel{0}} \times 60$

$\frac{\cancel{300}}{\cancel{77}} = 3\frac{69}{77}$ mins

$70 - 65\frac{5}{11}$

$4\frac{6}{11}$

CREATE U Aptitude (in Telugu)

Clocks

A watch which gains uniformly, is 5 mins slow at 8 O Clock (8 am) in the morning on Sunday & it is 5 min 48 secs fast at 8 Pm on the following Sunday. When was it correct ?

8 Am Sunday + 83 hrs 20 min

$\Rightarrow$ 7:20 pm Wednesday

Sol: Total time Gained = 5 + 5 : 48 = 10 min 48 secs $\rightarrow$ 1 week + 12 hrs

Time has to Gained $\longrightarrow$ 5 mins $\longrightarrow$?

10 min 48 sec $\rightarrow (7 \times 24) + 12$

5 min $\rightarrow$?

$10\frac{\cancel{48}\,4}{\cancel{5}\,5} = \frac{54}{5} \rightarrow$ 180 hours

5 $\longrightarrow$?

$\frac{180 \times 5}{54/5} = \frac{\overset{20}{\cancel{180}} \times 5 \times 5}{\underset{10}{\cancel{54}}}$

$\Rightarrow 250/3 = 83\frac{1}{3}$ hrs $\Rightarrow$ 83 hrs 20 m

Clocks

A watch which gains uniformly is 2 mins slow at noon (12 pm) on monday & is 4 mins 48 secs fast at 2 pm on following monday. When was it Correct?

Total Time Gained → Total Time Taken

Sol: 2 + 4 : 48 → 6 mins 48 secs → 1 weeks + 2 hrs

6 48 / 60 5 = 34/5 → 170 hrs

Time Gained : ? (Correct Time)

⇒ 50 hrs from 12 Pm Monday

2 days 2 hrs → = 2 Pm Wednesday

⇒ 170×2 / 34/5 = 170×2×5 / 34 = 50 hrs

CREATE U Aptitude (in Telugu)

Clocks

A clock is set right at 8 Am. The clock gains 10 mins in 24 hours. What will be the true time when the clock indicates (1 Pm) on the following day.

Sol:

Wrong Time	Correct Time
24 hrs 10 min	24 hrs
29 hrs	? ⇒ 28 hrs 48 mins

8 Am + 28 hrs 48 min

⇒ 12:48 Pm on following Day

⇒ 1 Pm − 12 mins

⇒ 12:48 pm

24×29 / 24 10/60 = 24×29 / 145/6 = 24×29×6 / 145 5 = 144/5 = 28 4/5

⇒ 28 4/5 hr ⇒ 28 hrs 48 mins

CREATE U Aptitude (in Telugu)

Clocks

A watch which gains 5 secs in 3 mins was set right at (7 Am) In the afternoon of the same day, when the watch indicated quarter past 4 o'clock, the true time is ?

Sol :-

Wrong time ⟶ Correct Time

3 min 5 secs ⟶ 3min

9 hrs 15 mins ⟶ ? (9hrs)

$3\frac{81}{60_{12}} = \frac{37}{12}$ ⟶ 3min

$= (9 \times 60) + 15$ ⟶ ?

$\frac{37}{12}$ — 3 mins

555 — ?

$\frac{3 \times 555}{37/12} = \frac{3 \times 555 \times 12}{37}$

$= 540m$

⇒ 540m

⇒ $\frac{540}{60}$ hrs

= 9hrs

7 Am + 9 = 4Pm

⇒ 4:15 − 15 = 4Pm

Clocks

A clock stricks once at 1 o'clock, twice at 2 o'clock, thrice at 3 o'clock, four times at 4 o'clock and so on.. If it takes 10 seconds to strick at 6 o'clock, find the time taken by it to strick at 12 o'clock ?

1 2 3 4 5

| | | | | |

→ 10secs

6 o'clock → (6 Times) → 10 secs

12 o'clock → (12 Times) → ? (20 Secs X)

5 Gaps

11 Gap — ?

$\frac{1}{1}\frac{1}{2}\frac{1}{3}\frac{1}{4}\frac{1}{5}\frac{1}{6}\frac{1}{7}\frac{1}{8}\frac{1}{9}\frac{1}{10}\frac{1}{11}$ ⟶ ?

×2

6T ⇒ 5G — 10 secs

12T ⇒ 11G ⟶ ? (22 Secs)