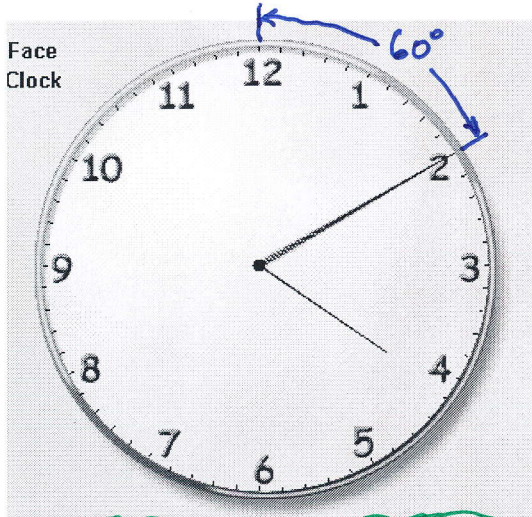


Worked Examples – Angle Between the Hands on the Clock – II

Find the angle between the minute hand and the hour hand on the clock at the following times:

1. 4:10
2. 5:18

Solutions:



At 4 o'clock, the minute hand started straight up. At 4:10 it has moved 60° ($2 \times 30^\circ$).

At 4 o'clock, the hour hand started at the 4, 120° from straight up.

Use h = number of degrees the hour hand has moved past the 4

$$\frac{10 \text{ min}}{60 \text{ min}} = \frac{h}{30^\circ} \rightarrow h = 5^\circ$$

At 4:10 the hour hand is at $120^\circ + 5^\circ = 125^\circ$

$$125^\circ - 60^\circ = 65^\circ \quad \boxed{\text{Answer: } 65^\circ}$$

Note that the angle between consecutive numbers on the clock is 30° (because $\frac{1}{12}$ of $360^\circ = 30^\circ$).

At 5 o'clock, the minute hand started straight up.

Use m = number of degrees the hour hand has moved since 5 o'clock

$$\frac{18 \text{ min}}{60 \text{ min}} = \frac{m}{360^\circ} \rightarrow m = 108^\circ$$

At 5 o'clock, the hour hand started at the 5, which is 150° from straight up.

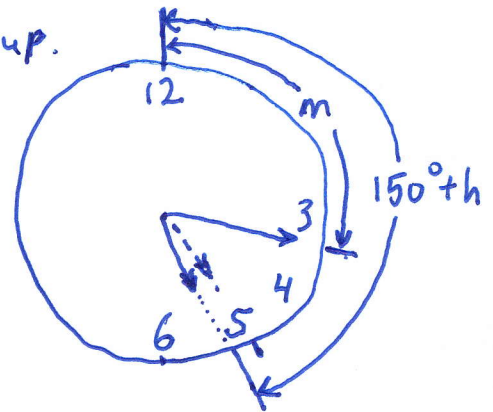
Use h = number of degrees the hour hand moves in 18 min

$$\frac{18 \text{ min}}{60 \text{ min}} = \frac{h}{30^\circ} \rightarrow h = 9^\circ$$

Hour hand is at $150^\circ + 9^\circ = 159^\circ$

$$159^\circ - 108^\circ = 51^\circ$$

$$\boxed{\text{Answer: } 51^\circ}$$



Objective: Given a time of day, find the angle between the hands on the clock.