
IMO Speed-Distance-Time Questions

Level: Intermediate Ref No: M35

Puzz Points: 23

[Maclaurin 2006 Q5] At six o'clock, a spider starts to walk at a constant speed from the hour hand anticlockwise round the rim of the clock face. When it reaches the minute hand, the spider turns around and walks round the rim in the opposite direction at the same constant speed, reaching the minute hand again after a further 20 minutes.

What time does the clock read when the spider reaches the minute hand for the second time?

Solution: 6:26

Level: Intermediate Ref No: M46

Puzz Points: 15

[Hamilton 2007 Q4] Inzamam runs twice as fast as he walks. On Monday, when going to school, he walked for twice the time for which he ran. On Tuesday, doing the same journey, he ran for twice the time that he walked and was six minutes quicker than on Monday.

On Wednesday, he walked all the way to school. How long did this take him?

Solution: 40 minutes

Level: Intermediate Ref No: M80

Puzz Points: 15

[Hamilton 2008 Q3] Kelly cycles to a friend's house at an average speed of 12km/hr. Her friend is out, so Kelly immediately returns home by the same route. At what average speed does she need to cycle home if her average speed over the whole journey is to be 15km/hr?

Solution: 20 km/h

Level: Intermediate Ref No: M94

Puzz Points: 13

[Cayley 2009 Q5] Two candles are the same height. The first takes 10 hours to burn completely whilst the second takes 8 hours to burn completely.

Both candles are lit at midday. At what time is the height of the first candle twice the height of the second candle?

Solution: 18:40

[Cayley 2010 Q4] Walking at constant speeds, Eoin and his sister Angharad take 40 minutes and 60 minutes respectively to walk to the nearest town.

Yesterday, Eoin left home 12 minutes after Angharad. How long was it before he caught up with her?

Solution: 24 minutes