
JMO Speed-Distance-Time Questions

Level: Junior Ref No: J15

Puzz Points: 12

[JMO 2007 B3] a) Yesterday evening, my journey home took 25% longer than usual. By what percentage was my average speed reduced compared to normal?

b) By what percentage would I need to increase my usual average speed in order for the journey to take 20% less time than usual?

Solution: (a) 20% (b) 25%

Level: Junior Ref No: J35

Puzz Points: 14

[JMO 2011 B3] Calum and his friend cycle from A to C, passing through B.

During the trip he asks his friend how far they have cycled. His friend replies "one third as far as it is from here to B". Ten miles later Calum asks him how far they have to cycle to reach C. His friend replies again "one third as far as it is from here to B".

How far from A will Calum have cycled when he reaches C?

Solution: $13\frac{1}{3}$ miles

Level: Junior Ref No: J51

Puzz Points: 12

[JMO 2010 B3] Jack and Jill went up the hill. They started at the same time, but Jack arrived at the top one-and-a-half hours before Jill. On the way down, Jill calculated that, if she had walked 50% faster and Jack had walked 50% slower, then they would have arrived at the top of the hill at the same time.

How long did Jill actually take to walk up to the top of the hill?

Solution: $2\frac{1}{4}$ hours

Level: Junior Ref No: J57

Puzz Points: 12

[JMO 2009 B3] Tom left a motorway service station and travelled towards Glasgow at a steady speed of 60mph. Tim left the same service station 10 minutes after Tom and travelled in the same direction at a steady speed, overtaking Tom after a further 1 hour 40 minutes. At what speed did Tim travel?

Solution: 66 mph