Speed, Distance & Time: Hard Practice Paper 6 Answers

Q#	Answer	Explanation
1	B	The train must travel its own length as well as the length of the bridge, which is 250 + 150 = 400 metres. Its speed is therefore 400 ÷ 20 = 20 metres each second.
2	B	The steepest part of the line is between 2 and 3 hours, where the distance climbs from 30 km to 90 km. That is 90 − 30 = 60 kilometres in one hour, so 60 km/h.
3	A	The car gains 80 − 50 = 30 kilometres on the lorry every hour. Forty minutes is two thirds of an hour, so the gap is two thirds of 30, which is 20 kilometres.
4	A	Each kilometre costs him 1/5 of an hour walking and 1/20 cycling, which is 1/5 + 1/20 = 1/4 of an hour for every kilometre of the distance. One hour therefore covers 4 kilometres each way.
5	C	Work out each time and divide: P takes 2 hours for 150 km, so 75 km/h. Q takes 3 hours for 255 km, so 85 km/h. R takes 1.5 hours for 105 km, so 70 km/h. S takes 3 hours for 270 km, giving 270 ÷ 3 = 90 km/h, the fastest.
6	A	The first leg took 90 ÷ 60 = 1.5 hours, leaving 3.5 − 1.5 = 2 hours for the remaining 240 − 90 = 150 kilometres. That is 150 ÷ 2 = 75 km/h.
7	E	By 10:00 the first car has covered 60 km, leaving a gap of 240 − 60 = 180 kilometres. From then the gap closes at 60 + 90 = 150 km/h, taking 180 ÷ 150 = 1.2 hours, which is 1 hour 12 minutes after 10:00.
8	D	Twenty minutes is 20 × 60 = 1200 seconds, so the car covers 25 × 1,200 = 30000 metres. That is 30,000 ÷ 1,000 = 30 kilometres.
9	B	He has 50 − 32 = 18 minutes left for the remaining 10 − 6 = 4 kilometres. Sharing the time gives 18 ÷ 4 = 4.5 minutes for each kilometre.

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10	E	Passing completely means covering both lengths, which is 200 + 160 = 360 metres. Coming towards each other they close at 20 + 25 = 45 metres each second, so it takes 360 ÷ 45 = 8 seconds.
11	D	The flat section between 1 and 2 hours shows the car standing still. In the third hour it covers 100 − 40 = 60 km, more than the 40 km of the first hour, so that is its fastest hour.
12	E	Downstream takes 24 ÷ 12 = 2 hours and upstream takes 24 ÷ 8 = 3 hours. Altogether the trip lasts 2 + 3 = 5 hours.
13	D	The first part takes 30 ÷ 30 = 1 hour and the second 60 ÷ 20 = 3 hours, making 4 hours for 90 km. The average speed is 90 ÷ 4 = 22.5 km/h, not the midpoint of the two speeds.
14	C	The driving takes 315 ÷ 70 = 4.5 hours, which is 4 hours 30 minutes, and the break adds 45 minutes, making 5 hours 15 minutes. Counting back, from 11:45 to 17:00 is 5 hours and 15 minutes.
15	C	Turn each into kilometres per hour: the car does 72, the bus 65 and the tram 66. The train covers 4 km in 3 minutes, which is 20 lots of 3 minutes in an hour, giving 4 × 20 = 80 km/h, the fastest.

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