

Speed Distance Time Mark Scheme		
1(a)	Time = $3 \div 6 = 0.5$ hours 30 minutes	[1] Time = Distance \div Speed
1(b)	Speed = $126 \div 2 = 63$ mph	[1] Speed = Distance \div Time
1(c)	Distance = $23 \times 3.5 = 80.5$ miles	[1] Distance = Speed \times Time
2(a)	Speed = $214 \div 7.25$	[1] Calculation
	= 29.52 mph	[1] Correct answer and units (mph)
2(b)	Speed = $214 \div 3.625 = 59.03448$	[1] Accept without units
3(a)	Time = $122 + (07:27 - 07:05) = 144$ minutes = 2 h 24 m	[1] Total duration
	Speed = $197 \div 2.4 = 82.08$ mph (to 2 dp)	[1] Average speed
3(b)	First journey distance = $(197 - 175) = 22$ miles First journey time = 12 minutes = 0.2 hours First journey speed = $22 \div 0.2 = 110$ mph	[1] Average speed of first journey
	Second journey speed = $175 \div 2.03 = 86.07$ mph (to 2d.p.)	[1] Average speed of second journey
	$110 - 86.07 = 23.93$ mph	[1] Correct difference in speeds
4(a)	Time = $\frac{\text{Distance}}{\text{Speed}} = \frac{100}{80}$	[1] Time = Distance \div Speed
	= 1.25 hours = 1 hour and 15 minutes.	[1] Simplifying into hours and mins
4(b)	Time is 55 minutes = 0.917 hours	[1] Converting to hrs
	Speed = $\frac{\text{Distance}}{\text{Time}} = \frac{100}{0.917} = 109 \text{ km h}^{-1}$	[1] Correct speed
5(a)	Time from college to work = $(0.24 \div 2) \times 60 = 7.2$ minutes Waiting time = 7 minutes	[1] Time=Distance \div Speed
	Driving time = $7 \div 26 = 0.2692$ hours = 16.15 minutes	[1] Time=Distance \div Speed
	$\therefore 1630 \text{ h} + 7 \text{ m} + 16 \text{ m} + 7.2 \text{ m} = 17:00 \text{ h}$	[1] Correct total time
5(b)	Time to jog = $7.1 \div 7.4 = 0.9594\text{h}$	[1] Time=Distance \div Speed
	$1630 \text{ h} + 0.9594 \text{ h (58 minutes)} = 17:28 \text{ h}$	[1] Correct total time
6	Time from Depot to Museum = $0.7 \div 3 = 0.23 \text{ h} = 14 \text{ minutes}$	[1] Time=Distance \div Speed
	Time from Bus Stop to Depot = $2.2 \div 25 = 0.088 \text{ h} = 5.28 \text{ minutes} = 5 \text{ m } 16 \text{ seconds}$	[1] Time=Distance \div Speed
	$1800 \text{ h} - 14 \text{ m} - 5 \text{ m } 16 \text{ s} = 17:40 \text{ h } 44 \text{ seconds}$	[1] Correct total time
	Bus prior to this is 1730	[1] Choice of right bus

Turn over ►

7(a)	Distance from A to B = $825 \times 7.4 = 6105$	[1] Distance=Speed×Time
	Distance from B to C = $722 \times 4.8 = 3465.6$	[1] Distance=Speed×Time
	Distance from A to B to C = $6105 + 3465.6 = 9570.6$ km	[1] Correct total difference
7(b)	$AC = \sqrt{6105^2 + 3465.6^2} = 7020.07$	[1] By use of Pythagoras or otherwise
	Time = $7020.07 \div 795 = 8.83$ h \approx 8 h 50 m	[1] Time=Distance÷Speed
	Arrival Time = 11: 53 h + 8 h 50 m = 20: 43 h	[1] Correct time of arrival

END