

Speed, Distance, Time Mark Scheme		
1(a)	$Time = 3 \div 6 = 0.5 \text{ hours}$ 30 minutes	[1] $Time = Distance \div Speed$
1(b)	$Speed = 126 \div 2 = 63 \text{ mph}$	[1] $Speed = Distance \div Time$
1(c)	$Distance = 23 * 3.5 = 80.5 \text{ miles}$	[1] $Distance = Speed \times Time$
2(a)	$Speed = 214 \div 7.25$	[1] Calculation
	$= 29.52 \text{ mph}$	[1] Correct answer and units (mph)
2(b)	$Speed = 214 \div 3.625 = 59.03448$	[1] Accept without units
3(a)	$Time = 122 + (07:27 - 07:05) = 144 \text{ minutes} = 2 \text{ h } 24 \text{ m}$	[1] Total duration
	$Speed = 197 \div 2.4 = 82.08 \text{ mph (to 2 dp)}$	[1] Average speed
3(b)	First journey distance = $(197 - 175) = 22 \text{ miles}$ First journey time = 12 minutes = 0.2 hours First journey speed = $22 \div 0.2 = 110 \text{ mph}$	[1] Average speed of first journey
	Second journey speed = $175 \div 2.03 = 86.07 \text{ mph (to 2 d.p.)}$	[1] Average speed of second journey
	$110 - 86.07 = 23.93 \text{ mph}$	[1] Correct difference in speeds
4(a)	$Time = \frac{Distance}{Speed} = \frac{100}{80}$	[1] $Time = Distance \div Speed$
	$= 1.25 \text{ hours}$ $= 1 \text{ hour and } 15 \text{ minutes.}$	[1] Simplifying into hours and mins
4(b)	Time is 55 minutes = 0.917 hours	[1] Converting to hrs
	$Speed = \frac{Distance}{Time} = \frac{100}{0.917} = 109 \text{ km h}^{-1}$	[1] Correct speed

Turn over ►

5(a)	$\begin{aligned} \text{Time from college to work} &= (0.24 \div 2) \times 60 \\ &= 7.2 \text{ minutes} \\ \text{Waiting time} &= 7 \text{ minutes} \end{aligned}$	[1] $\text{Time} = \text{Distance} \div \text{Speed}$
	$\text{Driving time} = 7 \div 26 = 0.2692 \text{ hours} = 16.15 \text{ minutes}$	[1] $\text{Time} = \text{Distance} \div \text{Speed}$
	$\therefore 1630h + 7m + 16m + 7.2m = 17:00 \text{ h}$	[1] Correct total time
5(b)	$\text{Time to jog} = 7.1 \div 7.4 = 0.9594h$	[1] $\text{Time} = \text{Distance} \div \text{Speed}$
	$1630h + 0.95h \text{ (58 minutes)} = 17:28 \text{ h}$	[1] Correct total time
6	$\begin{aligned} \text{Time from Depot to Museum} &= \\ 0.7 \div 3 &= 0.23 \text{ h} = 14 \text{ minutes} \end{aligned}$	[1] $\text{Time} = \text{Distance} \div \text{Speed}$
	$\begin{aligned} \text{Time from Bus Stop to Depot} &= \\ 2.2 \div 25 &= 0.088h = 5.28 \text{ minutes} = 5m 16 \text{ seconds} \end{aligned}$	[1] $\text{Time} = \text{Distance} \div \text{Speed}$
	$1800h - 14m - 5m16s = 17:40 \text{ h } 44\text{seconds}$	[1] Correct total time
	$\text{Bus prior to this is } 1730$	[1] Choice of right bus
7(a)	$\text{Distance from A to B} = 825 \times 7.4 = 6105$	[1] $\text{Distance} = \text{Speed} \times \text{Time}$
	$\text{Distance from B to C} = 722 \times 4.8 = 3465.6$	[1] $\text{Distance} = \text{Speed} \times \text{Time}$
	$\text{Distance from A to B to C} = 6105 + 3465.6 = 9570.6 \text{ km}$	[1] Correct total difference
7(b)	$AC = \sqrt{6105^2 + 3465.6^2} = 7020.07$	[1] By use of Pythagoras or otherwise
	$\text{Time} = 7020.07 \div 795 = 8.83h \approx 8h 50m$	[1] $\text{Time} = \text{Distance} \div \text{Speed}$
	$\text{Arrival Time} = 11:53h + 8h50m = 20:43h$	[1] Correct time of arrival

END