

Q1. (2018)

13	Alternative method 1		
	60 ÷ 5 or 12 or 3.5 ÷ 5 or 0.7	M1	oe
	their 12 × 3.5 or their 0.7 × 60	M1dep	oe
	42	A1	
	Alternative method 2		
	7 (miles) in 10 (minutes) or 10.5 (miles) in 15 (minutes) or 14 (miles) in 20 (minutes) or 21 (miles) in 30 (minutes) or 35 (miles) in 50 (minutes)	M1	
	7 × 6 or 10.5 × 4 or 14 × 3 or 21 × 2 or 35 ÷ 3.5 × 2	M1dep	oe
	42	A1	
	Alternative method 3		
	5 ÷ 60 or 0.08(3...)	M1	oe
	3.5 ÷ their 0.08(3...)	M1dep	oe
	42	A1	Accept [42, 42.2]
	Additional Guidance		
	$\frac{5}{60}$ or $\frac{1}{12}$ is oe 0.08(3...)	M1	

Q2. (2022)

Q	Answer	Mark	Comments
28	Alternative method 1 – compares speeds in m/s		
	200 ÷ 24 or 8.3(3...)	M1	oe eg $\frac{200}{24}$ or $8\frac{1}{3}$
	28.8 × 1000 ÷ 60 ÷ 60 or 8	M1	oe eg 28 800 ÷ 3600 or 28.8 ÷ 3.6
	8 and 8.3(3...) and Tom	A1	oe eg 8 and $8\frac{1}{3}$ and Tom
	Alternative method 2 – compares speeds in km/h		
	200 ÷ 24 or 8.3(3...)	M1	oe eg $\frac{200}{24}$ or $8\frac{1}{3}$
	their 8.3(3...) ÷ 1000 × 60 × 60 or 30	M1dep	oe eg 0.008 3(3...) × 3600
	30 and Tom	A1	
	Alternative method 3 – time for Adil starting with m/s		
	28.8 × 1000 ÷ 60 ÷ 60 or 8	M1	oe eg 28 800 ÷ 3600
	200 ÷ their 8 or 25	M1dep	oe eg $\frac{200}{8}$
	25 and Tom	A1	oe eg Tom by 1s
	Alternative method 4 – time for Adil starting with km/h		
	$\frac{200 \div 1000}{28.8}$ or [0.0069, 0.007] or $\frac{200}{28.8}$ or [6.9, 7]	M1	oe eg $\frac{0.2}{28.8}$ eg $\frac{125}{18}$
	their [0.0069, 0.007] × 60 × 60 or their [6.9, 7] ÷ 1000 × 60 × 60 or 25	M1dep	oe eg $\frac{0.2}{28.8} \times 3600$
	25 and Tom	A1	oe eg Tom by 1s

Mark scheme and Additional Guidance continue on the next page

Q	Answer	Mark	Comments
28 cont	Alternative method 5 – distance for Adil in 24s		
	28 800 × 24 or 691 200 or 28.8 ÷ 60 ÷ 60 or 0.008 or 28.8 × 24 or 691.2	M1	oe eg $\frac{3456}{5}$
	their 691 200 ÷ 60 ÷ 60 or their 0.008 × 1000 × 24 or their 691.2 × 1000 ÷ 60 ÷ 60 or 192	M1dep	oe eg 28 800 × 24 ÷ 3600
	192 and Tom	A1	
	Additional Guidance		
	Up to M2 may be awarded for correct work, with no or incorrect answer, even if this is seen amongst multiple attempts		
	Ignore all units		
	Allow other correct comparisons eg 500 and 480 (this is metres per minute) eg 500 and 480 and Tom		M1M1 M1M1A1
	200 m = 0.2 km, 24 s = 24 ÷ 60 ÷ 60 = $\frac{1}{150}$ hour, 0.2 ÷ $\frac{1}{150}$ = 30 and Tom		M1M1A1
	$\frac{200 \div 1000}{24} = \frac{1}{120}$ (or 0.0083...)		M1

Q	Answer	Mark	Comments
24(a)	Alternative method 1: working in metres per second or kilometres per second		
	1500 (metres) or 0.05 (km)	B1	implied by 30 or 1200
	their $1500 \div 50 \times 40$ or $1.5 \div \text{their } 0.05 \times 40$ or 1200	M2	oe M1 their $1500 \div 50$ or 30 oe or $50 \div 40$ or 1.25 oe or $1.5 \div \text{their } 0.05$ oe their 1500 must be using digits 15 (and zeros) their 0.05 must be using single digit 5 (and zeros)
	their $1200 \div 60$	M1dep	oe dep on M2
	20	A1ft	ft their 1500 or their 0.05
	Alternative method 2: working in metres per minute or kilometres per minute		
	1500 (metres) or 0.05 (km)	B1	implied by 0.075
	$40 \div 60$ or $\frac{2}{3}$	M1	oe accept [0.66, 0.67]
	$50 \div (40 \div 60)$ or 75 or $\frac{\text{their } 0.05}{(40 \div 60)}$ or 0.075 or their $1500 \times (40 \div 60)$	M1dep	oe calculation their 1500 must be using digits 15 (and zeros) their 0.05 must be using single digit 5 (and zeros)
	their $1500 \div \text{their } 75$ or $1.5 \div \text{their } 0.075$ or their $1500 \times (40 \div 60) \div 50$	M1dep	oe
	20	A1ft	ft their 1500 or their 0.05

24(a) cont	Additional Guidance	
	$1500 \div 1.25$	B1M2
	$1.5 \div 50 \times 40$ their 1500 must be using digits 15 (and zeros)	B0M2
	$1.5 \div 0.5 \times 40$ their 0.05 must be using single digit 5 (and zeros)	B0M2
	$150 \div 50$ their 1500 must be using digits 15 (and zeros)	B0M1
	$150 \div 1.25 = 120$, $120 \div 60 = 2$	B0M2M1A1ft

Q4. (2024)

Q	Answer	Mark	Comments
24(b)	It is greater than the answer to part (a)	B1	