

Q1. (2019)

22	Alternative method 1		
	8^2 or 64 and 17^2 or 289	M1	
	$\sqrt{17^2 - 8^2}$ or $\sqrt{225}$ or 15	M1dep	oe implies M2 may be seen on diagram
	$8 \times 3 \times$ their 15 or $24 \times$ their 15	M1dep	dep on M2 oe eg $(8 + 16) \times$ their 15 or $0.5 \times 8 \times$ their 15×6
	360	A1	SC2 [448.8, 456]
	Alternative method 2		
	$\cos C = \frac{8}{17}$ or $C = [61.9, 62]$	M1	may be seen on diagram
	$17 \times \sin$ their [61.9, 62] or [14.9, 15.1]	M1dep	may be seen on diagram oe eg $8 \times \tan$ their [61.9, 62]
	$8 \times 3 \times$ their [14.9, 15.1] or $24 \times$ their [14.9, 15.1] or [357.6, 362.4]	M1dep	dep on M2 oe eg $(8 + 16) \times$ their [14.9, 15.1] or $0.5 \times 8 \times$ their [14.9, 15.1] $\times 6$
	360	A1	SC2 [448.8, 456]
	Alternative method 3		
	$\sin A = \frac{8}{17}$ or $A = [28, 28.1]$	M1	may be seen on diagram
	$17 \times \cos$ their [28, 28.1] or [14.9, 15.1]	M1dep	may be seen on diagram oe eg $8 \div \tan$ their [28, 28.1]
	$8 \times 3 \times$ their [14.9, 15.1] or $24 \times$ their [14.9, 15.1] or [357.6, 362.4]	M1dep	dep on M2 oe eg $(8 + 16) \times$ their [14.9, 15.1] or $0.5 \times 8 \times$ their [14.9, 15.1] $\times 6$
	360	A1	SC2 [448.8, 456]

22 cont	Alternative method 4		
	$\cos C = \frac{8}{17}$ or $C = [61.9, 62]$	M1	may be seen on diagram
	$\frac{1}{2} \times 8 \times 17 \times \sin$ their [61.9, 62] or [59.9, 60.1]	M1dep	oe
	$6 \times$ their [59.9, 60.1] or [357.6, 362.4]	M1dep	oe
	360	A1	SC2 [448.8, 456]
	Additional Guidance		
	15 without a contradictory value for AB scores the first two marks on Alt method 1, even if not subsequently used	M1M1	
	$\sqrt{17^2 + 8^2}$	M1M0	
	3 rd M1 is for the total area and may be calculated in various ways eg using a trapezium + a triangle		
	3 rd M1 is for the total area so further work will lose the mark eg 360 seen followed by $360 - 60$, answer 300	M1M1M0A0	
	May use sine rule or cosine rule but must reach $AB = \dots$ to award the second M1 in Alt 2 or 3		

Q2. (2020)

Q	Answer	Mark	Comments
16(a)	Alternative method 1		
	9 × 2 or 18 or (8 – 2) × 4 or 24	M1	oe
	9 × 2 + (8 – 2) × 4	M1dep	oe eg (9 – 4) × 2 + (8 – 2) × 4 + 4 × 2
	42	A1	
	Alternative method 2		
	8 × 4 or 32 or (9 – 4) × 2 or 10	M1	oe
	8 × 4 + (9 – 4) × 2	M1dep	oe eg (9 – 4) × 2 + (8 – 2) × 4 + 4 × 2
	42	A1	
	Alternative method 3		
	9 × 8 or 72 or (8 – 2) × (9 – 4) or 30	M1	oe
	9 × 8 – (8 – 2) × (9 – 4)	M1dep	oe
	42	A1	
	Additional Guidance		
	A correct area seen but not used may score M1		
	9 × 2 = 18, 8 × 4 = 32 and 18 × 32		M1M0
	9 × 2 × 8 × 4		M0
	The 2nd M is for a complete method that would lead to an answer of 42 eg 9 × 2 = 18, 6 × 4 = 24, 18 + 24 = 42, then 42 ÷ 2 = 21		M1M0
	Beware eg 8 + 4 + 8 + 4 = 24 which is M0 without a correct area seen		M0
	Ignore any units given with answer		

Q3. (2020)

Q	Answer	Mark	Comments
16(b)	Valid criticism	B1	eg the formula is $\frac{1}{2} \times \text{base} \times \text{height}$ or the answer is double the correct answer or he has forgotten the $\frac{1}{2}$ or it should be $\frac{1}{2} \times 12 \times 8$ or it should be 48
	Additional Guidance		
	He needs to halve 12 (which is 6, 6 × 8 = 48)		B1
	He hasn't halved the base		B1
	0.5 × 12 × 8 = 48		B1
	His method was to work out a rectangle (insufficient)		B0
	He should divide by half		B0
	He didn't use the area of a triangle formula		B0
	He should have timesed all the measurements and divided by 2		B0
	Ignore irrelevant statements alongside a correct statement eg1 he has forgotten to divide by 2, the base should be shorter eg2 should have divided by 2, he worked out the area of a rectangle		B1 B1
	Two statements, one correct, one incorrect eg1 he has forgotten to divide by 2, it should be 14 × 8 ÷ 2 eg2 should have divided by 2, he worked out the area of a square eg3 forgot to halve the base, should have been 6 × 8 = 48		B0 B0 B0

Q4. (2022)

Q	Answer	Mark	Comments
27	Alternative method 1		
	16^2 or 256 and 30^2 or 900	M1	oe implied by 1156
	$\sqrt{16^2+30^2}$ or $\sqrt{256+900}$ or $\sqrt{1156}$ or 34	M1dep	oe eg $\sqrt{16^2+30^2} - 2 \times 16 \times 30 \times \cos 90$
	$52 \times \text{their } 34$ or 1768	M1dep	oe if M1M0 their 34 can be any value other than 16, 30 or 52 dep on 1st M
	$0.5 \times 30 \times 16$ or 240	M1	oe eg $0.5 \times 30 \times 16 \times \sin 90$
	2008	A1	SC3 2248
	Alternative method 2		
	$\tan^{-1} \frac{16}{30}$ or [28, 28.1] or $\tan^{-1} \frac{30}{16}$ or [61.9, 62]	M1	oe may be on diagram
	$\frac{30}{\cos(\text{their } [28, 28.1])}$ or $\frac{16}{\cos(\text{their } [61.9, 62])}$ or 34	M1dep	oe eg $\frac{16}{\sin(\text{their } [28, 28.1])}$ or $30 \cos(\text{their } [28, 28.1]) + 16 \cos(\text{their } [61.9, 62])$
	$52 \times \text{their } 34$ or 1768	M1dep	oe if M1M0 their 34 can be any value other than 16, 30 or 52 dep on 1st M
	$0.5 \times 30 \times 16$ or 240	M1	oe eg $0.5 \times 30 \times 16 \times \sin 90$
	2008	A1	SC3 2248

27 cont	Additional Guidance	
	Up to M4 may be awarded for correct work with no, or incorrect answer, even if this is seen amongst multiple attempts	
	The 4th mark in Alts 1 and 2 is not dependent on any other marks	
	34 or 1768 or 240 may be on the diagram	
	SC3 is for using 30×16 for the area of the triangle	
	Ignore units	

Q5. (2024)

(A)

Q	Answer	Mark	Comments
6(a)	DC or CD	B1	
	Additional Guidance		
	CDE		B0
	C : D		B0

(B)

Q	Answer	Mark	Comments
6(b)	Rectangle drawn with an area of 10	B2	any orientation B1 10 seen or any polygon drawn different from the given shape with an area of 10
	Additional Guidance		
	B1 may be awarded for correct work with no shape or incorrect shape, even if this is seen amongst multiple shapes		
	Mark intention		
	10 may be seen on the diagram		
	Draws the given shape reflected or in a different orientation		B0