

Q1. (2019)

25	Alternative method 1: areas		
	$\pi \times 10^2$ or 100π	M1	implied by [314, 314.2]
	$\pi \times (8 \div 2)^2$ or $\pi \times 4^2$ or 16π or $\pi \times (8 \div 2)^2 \div 2$ or $\pi \times 4^2 \div 2$ or $16\pi \div 2$ or 8π	M1	implied by [50.2, 50.3] or [25.12, 25.14] 92 π or 84 π or 92 : 8 or 8 : 92 or 84 : 16 or 16 : 84 implies M1M1
	(their $100(\pi) - \text{their } 8(\pi)$) $\div$ their $8(\pi)$ or $92(\pi) \div 8(\pi)$ or their $100(\pi) \div \text{their } 8(\pi) (-1)$ or $12\frac{1}{2}(-1)$ or $12.5(-1)$	M1dep	dep on M2 absence of π must be consistent condone $16(\pi)$ as their $8(\pi)$ in first calculation only, ie condone (their $100(\pi) - \text{their } 16(\pi)$) $\div$ their $16(\pi)$ or $84(\pi) \div 16(\pi)$, but not their $100(\pi) \div \text{their } 16(\pi) (-1)$
	$11\frac{1}{2}$ or 11.5	A1	condone $\frac{23}{2}$
	Alternative method 2: scale factor		
	$\frac{10}{8 \div 2}$ or $\frac{10}{4}$ or $\frac{5}{2}$ or $\frac{10 \times 2}{8}$ or $\frac{20}{8}$ or 2.5	M1	oe scale factor of lengths eg $\frac{2}{5}$ or 0.4 accept 2 : 5 or 5 : 2 oe ratio π may be present, but must be consistent in numerator and denominator
	(their $\frac{5}{2}$) ² or $\frac{25}{4}$	M1dep	oe scale factor of areas eg $\frac{4}{25}$ accept 4 : 25 or 25 : 4 oe ratio
	$2 \times \text{their } \frac{25}{4}(-1)$ or $\frac{25}{2}(-1)$ or $12\frac{1}{2}(-1)$ or $12.5(-1)$	M1dep	oe eg $2 \div \text{their } \frac{4}{25}(-1)$
	$11\frac{1}{2}$ or 11.5	A1	condone $\frac{23}{2}$
	Additional Guidance is on the following page		

25 (cont)	Additional Guidance	
	Accept, for example, $\pi 8$ or $\pi \times 8$ or $8 \times \pi$ for 8π	
	An answer of 11.5 π with no incorrect working	M1M1M1A0
	Consistent use of πd^2 for the area of a circle gives the area of the circle as 400π , the area of the semicircle as 32π and the area of the shaded part as 368π . This also gives the answer 11.5, but scores zero	M0M0M0A0
	Irrespective of where their answer comes from and the presence of other measures such as circumference, students can gain the first two marks of alternative method 1 if it is clear that the methods or values given are for area eg 1 Big area = 100π , little area = 8π , big circumference = 20π , little circumference = 4π , $20 \div 4 = 5$ eg 2 100π , 8π , 20π , 4π	M1M1M0A0 M0M0
	Do not award the second mark if the value of 8π comes from πd This is implied by, eg, 'Area of circle = 20π , area of semi-circle = 8π '	M?M0 M0M0
	$\frac{100(\pi) - 16(\pi)}{16(\pi)}$ (which may give an answer of 5.25)	M1M1M1A0
	$\frac{100(\pi)}{16(\pi)}$ (which may give an answer of 6.25)	M1M1M0A0

Q2. (2023)

Q	Answer	Mark	Comments
15	2×3 or 6 or 4×5 or 20 or 14 or 0.3	M1	oe
	(their 20 – their 6) ÷ their 20 or $1 - \frac{6}{20}$ or $\frac{14}{20}$ or $1 - 0.3$ or 0.7 or 30(%)	M1dep	
	70	A1	SC2 44.4 or better SC1 $\frac{4}{9}$ or $\frac{8}{18}$
	Additional Guidance		
	SC1 $\frac{4}{9}$ or $\frac{8}{18}$ use of perimeter without conversion to a percentage SC2 44.4 use of perimeter converted to a percentage		
	Up to M2 may be awarded for correct work seen in multiple attempts even if not subsequently used		
	Ignore any units		