Question Number	Scheme	Marks
1.(a)	Sets $\frac{1}{2}r^2 \times 1.25 = 15 \Rightarrow r^2 = 24$	M1
	$\Rightarrow r = \sqrt{24}$ or $2\sqrt{6}$ (only)	A1 **(2)**
(b)	Attempts $s = r\theta = 2\sqrt{6} \times 1.25$	M1
	Attempts $P = 2r + r\theta = 2 \times 2\sqrt{6} + 2\sqrt{6} \times 1.25$	dM1
	$= \frac{13\sqrt{6}}{2}$ oe	A1 **(3)** **(5 marks)**

(a)

M1 Uses $A = \frac{1}{2}r^2\theta$ in an attempt to find r

A1 $r = \sqrt{24}$ or $2\sqrt{6}$ only (oe) (isw after a correct answer is seen) Withhold the A if $r = \pm 2\sqrt{6}$ is given.

(b)

M1 Uses the formula $s = r\theta$ with their r and $\theta = 1.25$ in an attempt to find the arc length.

dM1 For applying $P = 2r + r\theta$ their r and $\theta = 1.25$ in an attempt to find the perimeter.

A1 $\frac{13\sqrt{6}}{2}$ (isw after a correct answer is seen). Accept $6.5\sqrt{13}$ (oe simplest forms)

Question Number	Scheme	Marks
2. (a)	$1.85 = 2a + b$ and $3.45 = 7a + b$	M1 A1
	Solves simultaneously to get $a = 0.32, b = 1.21$ (oe)	dM1 A1 **(4)**
(b)	States 1.21 m or 121 cm (oe)	B1ft **(1)** **(5 marks)**

(a)

M1 For either $1.85 = 2a + b$ or $3.45 = 7a + b$

A1 For both $1.85 = 2a + b$ and $3.45 = 7a + b$

dM1 Solves simultaneously to get a value for a and a value for b

A1 $a = 0.32, b = 1.21$ or equivalent fractions. May be seen in the equation.

(b)

B1 ft States 1.21 m or 121 cm (oe including units). Correct answer or follow through on their **positive** b

Alt part (a)

M1 Attempts $\frac{3.45 - 1.85}{7 - 2}$ Allow from attempts at use of arithmetic series, or from incorrect indexing. So E.g. $1.85 = 3a + b, 3.45 = 8a + b \Rightarrow a = ...$ or $a_n = a + (n-1)d, a_1 = 1.85, a_6 = 3.45 \Rightarrow a = ...$ gain this mark.

A1 $a = 0.32$ (may be called d if using AS)

dM1 Full correct method to find b E.g substitutes their $a = 0.32$ into either **correct** equation (with correct indexing), or in "$a_n = a + (n-1)d$" finds "a"$(= 1.53)$ and expands to find $b =$ "a"$-$"d".

A1 $a = 0.32, b = 1.21$