













**QUESTION 11**

11.1	Statement	Reason	NB: Accept the statements in 11.1.1; 11.1.2 and 11.1.3 in any order.  Correct statement: 1 mark Correct reason: 1 mark  Correct statement: 1 mark Correct reason: 1 mark NB: Do not penalise if they leave out $DE \parallel BC$ , because there is only one pair of parallel lines  Correct statement: 1 mark Correct reason: 1 mark  Correct reason: 1 mark
	In $\triangle ABC$ and $\triangle ADE$		
	11.1.1 $\hat{A} = \hat{A} \checkmark \mathbf{A}$	common $\checkmark \mathbf{A}$	
	11.1.2 $\hat{B} = \hat{D}_2 \checkmark \mathbf{A}$	corr. $\angle$ s and $DE \parallel BC \checkmark \mathbf{A}$	
	11.1.3 $\hat{C} = \hat{E}_2 \checkmark \mathbf{A}$	corr. $\angle$ s and $DE \parallel BC$ or sum of $\angle$ s of $\triangle \checkmark \mathbf{A}$	
	$\triangle ABC \parallel \triangle ADE$	11.1.4 $\angle \angle \angle \checkmark \mathbf{A}$	

(7)

11.2	Statement	Reason	Correct ratio : 1 mark each  Substitution: 1 mark  LM subject of the formula: 1 mark  Answer: 1 mark
	$\frac{KL}{DE} \checkmark = \frac{LM}{EF} \checkmark = \frac{KM}{DF} \mathbf{M}$	proportional sides of similar triangles	
	$\frac{LM}{7} = \frac{5}{2,5} \checkmark \mathbf{M}$		
	$LM = \frac{7(5)}{2,5} \text{ cm } \checkmark \mathbf{M}$		
	$= 14 \text{ cm } \checkmark \mathbf{CA}$		
	or		
	$\frac{DE}{KL} \checkmark = \frac{EF}{LM} \checkmark = \frac{DF}{KM} \mathbf{M}$	proportional sides of similar triangles	
	$\frac{2,5}{5} = \frac{7}{LM} \checkmark \mathbf{M}$		
	$LM = \frac{7(5)}{2,5} \text{ cm } \checkmark \mathbf{M}$		
	$LM = 14 \text{ cm } \checkmark \mathbf{CA}$		

(5)

[12]

**QUESTION 12**

12.1.1	<p>In <math>\Delta PQT</math>:</p> $PT^2 = PQ^2 - QT^2 \checkmark\mathbf{M}$ <p style="text-align: right;">Pythagoras</p> $PT^2 = 10^2 - 6^2 \text{ cm}^2 \checkmark\mathbf{M}$ $PT^2 = 64 \text{ cm}^2 \checkmark\mathbf{CA}$ $PT = \sqrt{64} \text{ cm}$ $PT = 8 \text{ cm} \checkmark\mathbf{CA}$	<p>Formula: 1 mark Substitution: 1 mark Calculation: 1 mark</p> <p><math>PT = 8 \text{ cm}</math>: 1 mark Answer only: 4 marks</p>	(4)
12.1.2	<p>In <math>\Delta PTR</math>:</p> $PR^2 = PT^2 + TR^2 \checkmark\mathbf{M}$ <p style="text-align: right;">Pythagoras</p> $= 8^2 + 15^2 \text{ cm}^2 \checkmark\mathbf{M}$ $= 289 \text{ cm}^2 \checkmark\mathbf{CA}$ $PR = \sqrt{289} \text{ cm}$ $PR = 17 \text{ cm} \checkmark\mathbf{CA}$	<p>CA from 12.1.1 if <math>PT \neq 8</math> Formula: 1 mark Substitution: 1 mark Calculation: 1 mark</p> <p><math>PR = 17 \text{ cm}</math>: 1 mark Answer only: 4 marks</p>	(4)
12.2	<p>Area of a circle = <math>120,7 \text{ cm}^2</math></p> $\pi r^2 = 120,7 \text{ cm}^2 \checkmark\mathbf{M}$ $\therefore r^2 = \frac{120,7 \text{ cm}^2}{\pi} \checkmark\mathbf{M}$ $\therefore r \approx 6,20 \text{ cm} \checkmark\mathbf{A}$	<p>Substitution: 1 mark Dividing by <math>\pi</math>: 1 mark Answer: 1 mark Penalise for incorrect rounding off Answer only: 3 marks</p>	(3)
12.3.1	<p>Area of <math>\Delta ABC = \frac{BC \times AD}{2}</math></p> $= \frac{24 \times 10}{2} \text{ cm}^2 \checkmark\mathbf{M}$ $= 120 \text{ cm}^2 \checkmark\mathbf{A}$ <p>or</p> <p>Area of <math>\Delta ABC = \frac{1}{2}(BC \times AD)</math></p> $= \frac{1}{2}(24 \times 10) \text{ cm}^2 \checkmark\mathbf{M}$ $= 120 \text{ cm}^2 \checkmark\mathbf{A}$	<p>Formula/ Substitution: 1 mark</p> <p>Answer: 1 mark Answer only: 2 marks</p>	(2)
12.3.2	4 times $\checkmark\mathbf{A}$	Answer: 1 mark	(1)
			<b>[14]</b>

**QUESTION 13**

	$2l + 2b = 46$ $l + b = 23$ $2x + 5 + x + 6 = 23 \checkmark\mathbf{M}$ $3x + 11 = 23$ $3x = 12$ $x = 4 \checkmark\mathbf{CA}$ <p>Area = <math>l \times b</math></p> $= 13 \times 10 \text{ cm}^2 \checkmark\mathbf{CA}$ $= 130 \text{ cm}^2 \checkmark\mathbf{CA}$	<p>Formula/ Substitution: 1 mark</p> <p><math>x = 4</math>: 1 mark Formula/ Substitution: 1 mark Answer: 1 mark</p>	(4)
			<b>[4]</b>

**Total: 140**