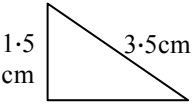


	Give 1 mark for each •	Illustration(s) for awarding each mark
1. (a)	ans: 1.9×10^6 1KU • ¹ answer	• ¹ $1.07 \times 10^7 - 8.8 \times 10^6 = 1.9 \times 10^6$
1. (b)	ans: 22% 2KU • ¹ know how to calculate % • ² calculation correct	• ¹ $\frac{1.9}{8.8} \times 100\%$ • ² answer
2.	ans: 0, 1, 2, 3 4KU • ¹ break brackets • ² collect like terms • ³ create positive variable • ⁴ state whole number solution	• ¹ $6 - 3x + 7 \geq 2x - 6$ • ² $-5x \geq -19$ • ³ $x \leq \frac{19}{5}$ • ⁴ answer
3.(a)	ans: $50m + 8t = 58.50$ 1KU • ¹ state equation	• ¹ answer
3.(b)	ans: $52m + 13t = 70.20$ 2RE • ¹ calculate new cost • ² state equation	• ¹ £70.20 • ² answer
3.(c)	ans: £6.55 4RE • ¹ attempts to solve equations simultaneously • ² correctly solves one variable • ³ correctly solves second variable • ⁴ states total cost of 3 medals & 2 trophies	• ¹ $650m + 104t = 760.50$ $416m + 104t = 561.60$ • ² $234m = 198.90$ $m = 0.85$ • ³ $50(0.85) + 8t = 58.50$ $t = 2$ • ⁴ 3 medals + 2 trophies cost £6.55
4.	ans: No, the price is quadrupled. 4RE • ¹ state equation • ² introduce change • ³ implement change • ⁴ comment on answer	• ¹ $C = kTD^2$ • ² $D \rightarrow 2D$ • ³ $C = kT(2D)^2 = 4kTD^2$ • ⁴ answer Candidates may produce a justified solution involving numerical values given.

	Give 1 mark for each •	Illustration(s) for awarding each mark										
5.	ans: 3.3 and -0.77 5KU <ul style="list-style-type: none"> •¹ know to use quadratic formula •² identify values of a, b, and c •³ finds discriminant •⁴ both solutions •⁵ correct rounding 	<ul style="list-style-type: none"> •¹ evidence of quadratic formula •² $a = 2$ $b = -5$ $c = -5$ •³ $b^2 - 4ac = \sqrt{65}$ •⁴ $3.2655\dots, -0.7655\dots$ •⁵ answer 										
6.	ans: 112° 4RE <ul style="list-style-type: none"> •¹ use SOHCAHTOA •² calculate first angle •³ calculate second angle •⁴ calculate missing angle 	<ul style="list-style-type: none"> •¹ sin ratio. •² $\sin A = \frac{10 \cdot 6}{14 \cdot 2} \Rightarrow A = 48^\circ$ •³ $\sin B = \frac{4 \cdot 8}{14 \cdot 2} \Rightarrow B = 20^\circ$ •⁴ $180 - (48+20)$ 										
7.	ans: 547.1cm or 547.25m 4 RE <ul style="list-style-type: none"> •1 for ratio •2 for $C = \pi \times 172$ •3 for calculation •4 for adding $2r$ and completing calculation 	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; border: none;"><u>Using 3.14</u></td> <td style="text-align: center; border: none;">Using π</td> </tr> <tr> <td style="border: none;">•1 250/360 x...</td> <td style="border: none;">•1 250/360 x...</td> </tr> <tr> <td style="border: none;">•2 172 x π</td> <td style="border: none;">•2 172 x 3.14</td> </tr> <tr> <td style="border: none;">•3 ... = 375.1</td> <td style="border: none;">•3 ... = 375.25</td> </tr> <tr> <td style="border: none;">•4 547.1cm</td> <td style="border: none;">•4 547.25cm</td> </tr> </table>	<u>Using 3.14</u>	Using π	•1 250/360 x...	•1 250/360 x...	•2 172 x π	•2 172 x 3.14	•3 ... = 375.1	•3 ... = 375.25	•4 547.1cm	•4 547.25cm
<u>Using 3.14</u>	Using π											
•1 250/360 x...	•1 250/360 x...											
•2 172 x π	•2 172 x 3.14											
•3 ... = 375.1	•3 ... = 375.25											
•4 547.1cm	•4 547.25cm											
8.	ans: 113.76cm² 5RE <ul style="list-style-type: none"> •¹ interpret information •² identify right angled triangle •³ calculate missing side •⁴ state breadth of seal •⁵ calculate area 	<ul style="list-style-type: none"> •¹ height of Δ is 1.5cm •² radius = 3.5cm •³ $\sqrt{(3 \cdot 5^2 - 1 \cdot 5^2)} = 3 \cdot 16\text{cm}$ •⁴ breadth = 6.32cm •⁵ answer 										

© Pegasys 2008	Illustration(s) for awarding each mark <ul style="list-style-type: none"> •¹ $\frac{182}{10} = 18.2$
----------------	--

Give 1 mark for each •

9.(a) ans: 18.2 1 KU

- ¹ calculating mean

9.(b) ans : 1.2 3 KU

- ¹ knowing how to calculate sd
- ² correctly calculating sd
- ³ rounding

9.(c) ans : Yes as mean and sd < standard set 1 KU

- ¹ answer
-

10. ans: £101 420 6RE

- ¹ correct strategy
 - ² calculate area of upper triangle
 - ³ calculate second side of lower triangle
 - ⁴ calculate area of lower triangle
 - ⁵ calculate total area
 - ⁶ calculate cost
-

11. ans: -2.3 4KU

- ¹ root lies between -2 & -3
 - ^{2/3} repeated calculations
 - ⁴ answer
-

Total :	KU	22	RE	29
---------	----	----	----	----

For PI & PII	Totals :	KU	45	RE	45
--------------	----------	----	----	----	----