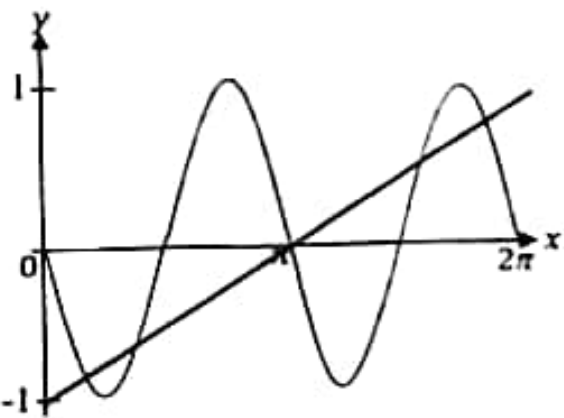


**Additional Mathematics Paper 2**  
**SPMRSM 2018**

**Answers Scheme**

No	Solution	Scheme	Sub marks	Marks
1	$x = \frac{17-5y}{2} \text{ or } x = (1-y)^2 \text{ or}$ $y = \frac{17-2x}{5} \text{ or } y = 1-\sqrt{x}$ $2(1-y)^2 + 5y = 17 \text{ or } 2x + 5(1-\sqrt{x}) = 17 \text{ or}$ $\sqrt{x} = 1 - \left(\frac{17-2x}{5}\right)$ $2y^2 + y - 15 = 0 \text{ or } 4x^2 - 73x + 144 = 0 \text{ or}$ $2x - 5\sqrt{x} - 12 = 0$ <hr/> <p><b>Factorization</b></p> $(2y-5)(y+3) = 0 \text{ or } (4x-9)(x-16) = 0 \text{ or}$ $(2\sqrt{x}+3)(\sqrt{x}-4) = 0$ <p><b>OR</b></p> <p><b>Formula</b></p> $y = \frac{-1 \pm \sqrt{1^2 - 4(2)(-15)}}{2(2)} \text{ or}$ $x = \frac{-(-73) \pm \sqrt{(-73)^2 - 4(4)(144)}}{2(4)}$ <p>a, b, c must be correct</p> <p><b>OR</b></p> <p><b>Completing the square</b></p> $\left(y + \frac{1}{4}\right)^2 = \frac{121}{16} \text{ or } \left(x - \frac{73}{8}\right)^2 = \frac{3025}{4}$ $y = \frac{5}{2} // 2.5 \text{ \& } y = -3 \text{ or } x = \frac{9}{4} // 2.25 \text{ \& } x = 16$ $x = \frac{9}{4} // 2.25 \text{ \& } x = 16 \text{ or } y = \frac{5}{2} // 2.5 \text{ \& } y = -3$	<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">P1</div> seen or implied  <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 10px auto;">K</div> Eliminate x or y  <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 10px auto;">K</div> Solve *quadratic equation  <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">N1</div> First set of values  <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 10px auto;">N</div> Second set of values   <p><b>Note :</b> 1. OW-1 it steps to solve the quadratic equation is not shown 2. SS-1 improper factorization is shown i.e: <math>\left(y - \frac{5}{2}\right)(y + 3)</math></p>	5	5

No	Solution	Scheme	Sub marks	Marks
2	<p>(a) <math display="block">\begin{aligned} \text{LHS} &amp;= \frac{\cos x}{\sin x} (1 - 2\sin^2 x - 1) \\ &amp;= \cos x (-2\sin x) \\ &amp;= -\sin 2x \\ &amp;= \text{RHS} \end{aligned}</math></p>	<p>Use</p> <p>(K1) <math>\cos 2x = 1 - 2\sin^2 x</math> or <math>\cos 2x = 2\cos^2 x - 1</math></p> <p>or <math>\cot x = \frac{\cos x}{\sin x}</math></p> <p>(N1) <math>-\sin 2x</math></p>	2	
(b)		<p>(P1) Shape of sine graph</p> <p>(P1) 2 cycles and amplitude = 1</p> <p>(P1) Reflection on the x-axis</p> <p>Note :</p> <ol style="list-style-type: none"> <li>1. Do not accept tangent graph</li> <li>2. Ignore graph outside the range</li> </ol>	3	8
(c)	$y = \frac{x}{\pi} - 1$	<p>(N1)</p> <p>(K1) Sketch straight line with gradient or y-intercept correct</p> <p>(N1) 5</p>	3	
	<p>Number of solution = 5</p>			

No

Solution

Scheme

Sub  
marks

3

$$a(2-0)^2 + 8 = 0 \text{ or } a(-2-0)^2 + 8 = 0$$

$$a = -2$$

$$y = -2x^2 + 8$$

$$A_1 = 7 \times 11$$

$$A_2 = \int_{-2}^2 -2x^2 + 8 dx$$

$$= \left[ -\frac{2x^3}{3} + 8x \right]_{-2}^2$$

$$= \left[ -\frac{2(2)^3}{3} + 8(2) \right] - \left[ -\frac{2(-2)^3}{3} + 8(-2) \right]$$

$$= 21\frac{1}{3}$$

$$\text{Area of to be painted, } A_3 = *A_1 - *A_2$$

$$= *77 - *21\frac{1}{3}$$

$$= 55\frac{2}{3}$$

$$\frac{*55\frac{2}{3}}{10} \times 3$$

$$= 16.71$$

Minimum = 4 buckets

$$\boxed{\text{P1}} \quad y = -2x^2 + 8$$

K1 Finding the area  
of rectangle

K1 Integrate  
 $*(-2x^2 + 8)$

Use limit

-2 and 2

K1

K1  $*A_1 - *A_2$

NI  $55\frac{2}{3}$

NI 4 buckets

7

No	Solution	Scheme	Sub marks	Marks
4				
(a)	$r = 0.95$  $\frac{x(1 - 0.95^3)}{1 - 0.95} = 855.75$  $x = 300$	<div style="border: 1px solid black; display: inline-block; padding: 2px;">PI</div> Seen or implied  <div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Use $S_1 = 855.75$ with $r = 0.95$  <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div> 300	3	
(b)	$300(0.95)^{n-1} < 200$  $(0.95)^{n-1} < \frac{200}{300}$  $n = 9$	<div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Use $300(0.95)^{n-1} < 200$ Accept = or $\leq$  <div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Solve the equation using logarithm  <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div> 9	3	8
(c)	$\frac{300}{1 - 0.95}$  6000	<div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Use $S_n = \frac{300}{1 - 0.95}$  <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div> 6000	2	

No	Solution	Marking Scheme	Sub marks	Marks
5 (a)	<p>(i) <math>\overline{BC} = \overline{BA} + \overline{AC}</math>  <math>= -3\underline{u} + 2\underline{v}</math></p> <p>(ii) <math>\overline{PQ} = \overline{PC} + \frac{1}{3}\overline{CA}</math>  <math>= \frac{1}{2}(-3\underline{u} + 2\underline{v}) + \frac{1}{3}(-2\underline{v})</math>  <math>= -\frac{3}{2}\underline{u} + \frac{1}{3}\underline{v}</math></p>	<p>K1 Use triangle law  N1 <math>\overline{BC} = -3\underline{u} + 2\underline{v}</math></p> <p>N1 <math>\overline{PQ} = -\frac{3}{2}\underline{u} + \frac{1}{3}\underline{v}</math></p>	3	
(b)	$-9\underline{u} + k\underline{v} = \lambda\left(-\frac{3}{2}\underline{u} + \frac{1}{3}\underline{v}\right)$ $-9\underline{u} + k\underline{v} = -\frac{3\lambda}{2}\underline{u} + \frac{\lambda}{3}\underline{v}$ $\frac{-3\lambda}{2} = -9 \quad k = \frac{\lambda}{3}$ $k = 2$	<p>K1 Use <math>PQ = \lambda PR</math> or <math>PR = \lambda PQ</math></p> <p>K1 Equate the coefficient <math>\underline{u}</math> and of <math>\underline{v}</math> and solve.</p> <p>N1 <math>k = 2</math></p>	3	6

No	Solution	Scheme	Sub marks
6 (a)	(i) $\bar{x} = \frac{8(47) + 10(52) + 6(57) + 2(62) + 3(67) + 72}{30}$ $= \frac{1635}{30}$ $= 54.5$	(K1) Use $\frac{\Sigma fx}{\Sigma f}$ (N1) 54.5	2
	(ii) $\sigma = \sqrt{\frac{90545}{30} - \left(\frac{1635}{30}\right)^2}$ $= 6.922$	(K1) Find $\Sigma fx^2$ and use formula for sd or var (N1) 6.922	2
(b)	(i) $\bar{x} = 52$ (ii) $\sigma = 6.922$	(N1) Follow his a(i) (N1) Follow his a(ii)	2

No	Solution	Scheme	Sub marks	Marks
7 (a)	<p>i) <math>P\left(z &lt; \frac{58 - \mu}{5}\right) = -0.5</math></p> $\frac{58 - \mu}{5} = -0.5$ $\mu = 60.5$ <p>ii) <math>P\left(z &gt; \frac{65 - 60.5}{5}\right)</math>  <math>= 0.1841</math></p> $\frac{n(A)}{250} = 0.1841$ $n(A) = 46 // 47$	<p>Use of <math>Z = \frac{X - \mu}{\sigma}</math></p> <p>Equate <math>\frac{58 - \mu}{5} = -0.5</math></p> <p>60.5</p> <p>0.1841</p> <p>Use <math>\frac{n(A)}{250} = 0.1841</math></p> <p>46//47</p>	3	10
(b)	<p>i) <math>{}^6C_0 (p)^0 (q)^6 = \frac{1}{729}</math></p> $p = \frac{2}{3}$ <p>ii) <math>P(X &lt; 2) = P(X = 0) + P(X = 1)</math></p> $= \frac{1}{729} + {}^6C_1 \left(\frac{2}{3}\right)^1 \left(\frac{1}{3}\right)^5$ $= \frac{13}{729} = 0.01783$	<p>Use <math>{}^6C_r p^r q^{6-r}</math></p> <p><math>p = \frac{2}{3}</math></p> <p>Use <math>{}^6C_r p^r q^{6-r}</math> and <math>p + q = 1</math></p> <p><math>\frac{13}{729}</math></p>	2	

No	Solution	Scheme	Sub mark	Marks
8 (a)	<p>(i) <math>m_1 m_2 = -1</math></p> $\left(-\frac{1}{h}\right)(-2) = -1$ <p><math>h = -2</math></p> <p>(ii) <math>y = -2x + 5 \dots\dots\dots(i)</math></p> $2y = x - 10 \dots\dots\dots(ii)$ <p><math>x = 4</math></p> <p><math>y = -3</math></p> <p><math>Q(4, -3)</math></p>	<p>Use <math>m_1 m_2 = -1</math> to find <math>h</math></p> $\left(-\frac{1}{h}\right)(-2) = -1$ <p>K1</p> <p>N1 <math>h = -2</math></p> <p>Solve simultaneous equation</p> <p>K1</p> <p>N1 <math>Q(4, -3)</math></p>	2	
(b)	$\frac{x(1) + 4}{1 + 4} = *4 \text{ or } \frac{3(4) + y(1)}{1 + 4} = *-3$ <p><math>S(16, -27)</math></p> $\text{Area} = \frac{1}{2} \begin{vmatrix} 0 & 1 & *16 & 0 \\ 0 & 3 & *-27 & 0 \end{vmatrix}$ $= \frac{1}{2}  -27 - 48 $ $= 37.5$	<p>Use ratio theorem</p> <p>K1</p> <p>N1 <math>S(16, -27)</math></p> <p>Use <math>\frac{1}{2} \begin{vmatrix} x_1 &amp; x_2 &amp; *x_3 &amp; x_1 \\ y_1 &amp; y_2 &amp; *y_3 &amp; y_1 \end{vmatrix}</math></p> <p>K1</p> <p>N1 37.5 or equivalent</p>	2	10
(c)	$\sqrt{(x-1)^2 + (y-3)^2} = 5$ $x^2 + y^2 - 2x - 6y - 15 = 0$	<p>Use <math>RT = 5</math></p> <p>K1</p> <p>N1 <math>x^2 + y^2 - 2x - 6y - 15 = 0</math> or equivalent</p>	2	



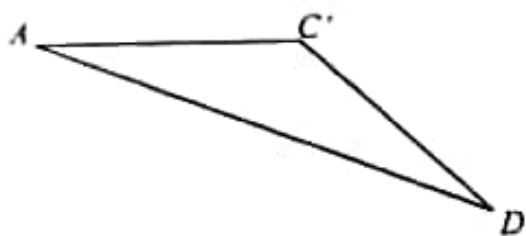
No	Solution	Scheme	Sub marks	Marks														
9	<p>(a)</p> <table border="1" data-bbox="71 313 774 526"> <tr> <td><math>\sqrt{x}</math></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td><math>\log y</math></td> <td>0.25</td> <td>0.42</td> <td>0.57</td> <td>0.76</td> <td>0.95</td> <td>1.10</td> </tr> </table> <p>(b)</p> <p>Correct axes and uniform scale  All points are correct  *6 points plotted correctly</p> <p>Draw line of best fit</p> <p>(c)</p> <p><math>\log y = (\log p)\sqrt{x} + \log q</math></p> <p>(i) <math>\log p = *0.17</math></p> <p><math>p = 1.47 \leftrightarrow 1.48</math></p> <p>(ii) <math>\log q = *0.08</math></p> <p><math>q = 1.18 \leftrightarrow 1.22</math></p>	$\sqrt{x}$	1	2	3	4	5	6	$\log y$	0.25	0.42	0.57	0.76	0.95	1.10	<p>NI</p> <p>NI</p> <p>Note: at least two d.p</p> <p>KI</p> <p>Plot <math>\log y</math> against <math>\sqrt{x}</math> with correct axes and uniform scale</p> <p>NI</p> <p>NI</p> <p>Line of best fit</p> <p>PI</p> <p>seen or implied</p> <p>KI</p> <p>Use *<math>m = \log p</math></p> <p>NI</p> <p>1.47 <math>\leftrightarrow</math> 1.48</p> <p>KI</p> <p>Use *<math>c = \log q</math></p> <p>NI</p> <p>1.18 <math>\leftrightarrow</math> 1.22</p> <p>Note:</p> <p>SS - 1 if,</p> <p>part of the scale is not uniform at the <math>\sqrt{x}</math>-axis and/or the <math>\log y</math>-axis from the first point to the last point</p> <p>or</p> <p>does not use the given scale</p> <p>or</p> <p>does not use graph paper</p>	<p>2</p> <p>3</p> <p>5</p>	<p>10</p>
$\sqrt{x}$	1	2	3	4	5	6												
$\log y$	0.25	0.42	0.57	0.76	0.95	1.10												

No	Solution	Scheme	Sub marks	Marks
10				
(a)	$\cos\left(\frac{\pi}{6}\right) = \frac{OS}{7.5} \text{ or}$	KI Use trigonometric ratio or equivalent to find OS	3	10
	$\sin\left(\frac{\pi}{3}\right) = \frac{OS}{7.5}$	KI *OS + 7.5		
	$PR = *6.495 + 7.5$ $= 13.995$	NI 13.995//14		
(b)				
	(i) $\angle SPO = \frac{\pi}{3}$ or 1.047 or 60°	PI Seen or implied	4	
	$QR = *13.995\left(\frac{\pi}{3}\right)$ $= 14.66$	KI Find arc QR or arc TSR KI *PQ + *arcQR + *arcTSR + *PT		
	$\text{Perimeter} = *13.995 + *14.66 + *6.495(\pi) + (7.5 - *6.495)$ $= 50.06 \leftrightarrow 50.08$	NI 50.06 ↔ 50.08		
	Area semicircle ORST $= \frac{1}{2} \times \pi \times *6.495^2 = 66.26$	KI Find the area of semicircle ORST or area of sector PQR	3	
	Area of sector PQR $= \frac{1}{2} \times *13.995^2 \times \frac{\pi}{3} = 102.55$	KI *Area PQR - *Area ORST		
	Area shaded region = *102.55 - *66.26 $= 36.29$	NI 36.26 ↔ 36.37		

No	Solution	Scheme	Sub marks	Marks
11				
(a)	$3000x$ $P(x) = 3000x - \left( -\frac{x^3}{3} + 65x^2 + 1500 \right)$ $= 3000x + \frac{x^3}{3} - 65x^2 - 1500$	<div style="border: 1px solid black; display: inline-block; padding: 2px;">P1</div> seen  <div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div>	3	
(b)	$\frac{dP}{dx} = 3000 + x^2 - 130x = 0$ $x^2 - 130x + 3000 = 0$ $(x - 100)(x - 30) = 0$ $x = 30, x = 100$ $\frac{d^2P}{dx^2} = 2x - 130$ $2(30) - 130 = -70 < 0$ $2(100) - 130 = 70 > 0$ $x = 30$	<div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Differentiate * $P(x)$ and equate to 0  <div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Solve quadratic equation  <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div> 30, 100  <div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> Find $P''(x)$ and substitute $x=100$ or $x=30$ OR substitute $x=100$ and $x=30$ into $P(x)$  <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div> 30	5	10
(c)	$3000(30) + \frac{30^3}{3} - 65(30)^2 - 1500$ $= \text{RM } 39000$	<div style="border: 1px solid black; border-radius: 50%; display: inline-block; padding: 2px;">KI</div> <div style="border: 1px solid black; display: inline-block; padding: 2px;">NI</div> RM 39000	2	
Note: For correct answer only. Award K1N1 if the method of substitution $x=30$ into $P(x)$ is shown in (b)				

No	Solution	Scheme	Sub marks	Marks
12	(i) & (ii)	Find $v = \int -4 dt$ or $s = \int v dt$		
(a)	$v = \int -4 dt = -4t + c$	K1		
	$S = -4(0) + c$	NI	Use $t = 1, s = 10$ to find $c$ of $s$	4
	$v = -4t + 5$	$v = -4t + 5$		
	$s = \int (-4t + 5) dt$	K1		
	$= -2t^2 + 5t + c$			
	$-2(1)^2 + 5(1) + c = 10$	NI	$s = -2t^2 + 5t + 7$	
	$c = 7$			
	$s = -2t^2 + 5t + 7$			
(b)	$v = -4t + 5 = 0$	K1	Use $v = 0$ to find $t$ and substitute into $s$	2
	$t = 1.25$	NI	$10.125 // \frac{81}{8} // 10 \frac{1}{8}$	
	$s = -2(1.25)^2 + 5(1.25) + 7$			
	$s = 10.125 // \frac{81}{8} // 10 \frac{1}{8}$			
(c)		P1	maximum shape graph	2
	P1	label all 3 points		
	$(10.125 - 7) + 10.125 + 18$ * graph	K1	use info from max quadratic graph	
	31.25	NI	31.25	
	OR			
	Total Distance Travelled	K1	use $\int_0^{1.25} v dt + \int_{1.25}^5 v dt$ or equivalent.	2
	$= \int_0^{1.25} (-4t + 5) dt + \int_{1.25}^5 (-4t + 5) dt$	NI	31.25	
	31.25			
	OR			
	Motion diagram			

No	Solution	Scheme	Sub marks	Marks
13				
(a)	$x + y \geq 10$  $\frac{x}{y} \leq \frac{3}{2}$ or equivalent  $24x + 32y \leq 480$ or equivalent	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">N1</div>  <div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">N1</div>  <div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">N1</div>	3	
(b)	Refer graph	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 5px;">K1</div> <div>Draw correctly at least one straight line from the *inequalities involves x and y</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 5px;">N1</div> <div>Draw correctly all the three *straight lines</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; display: inline-block; padding: 2px 10px; margin-right: 5px;">N1</div> <div>Region shaded correctly</div> </div>	3	
(c)	(i) $3 \leq x \leq 10$  (ii) Minimum point (6, 4)  $k = 360(6) + 540(4)$  $= 4320$	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px; margin-bottom: 10px;">N1</div> <div style="border: 1px solid black; display: inline-block; padding: 2px 10px; margin-right: 10px;">N1</div> (6, 4)  <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 5px;">K1</div> <div>Substitute any point in *shaded region into <math>360x + 540y</math></div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; display: inline-block; padding: 2px 10px; margin-right: 5px;">N1</div> <div>4320</div> </div>	2	10
<p>Note : SS-1 only once if            in (a)(i) the symbol '=' is not used at all            (ii) more than 3 inequalities given  <b>OR</b>            in (b)(i) does not use given scale            (ii) axes interchanged            (iii) not using graph paper</p>				

No	Solution	Scheme	Sub marks	Marks
14 (a)	<p>(i) <math>29.1 = \frac{1}{2} \times 15 \times CD \times \sin 104^\circ</math>  <math>CD = 3.999</math></p> <p>(ii) <math>\cos 64^\circ = \frac{8}{AC}</math>  <math>AC = 18.249 // 18.25</math></p> <p><math>AD^2 = 18.249^2 + 3.999^2 - 2 \times (18.249) \times (3.999) \cos 35^\circ</math>  <math>AD = 15.15</math></p> <p>(iii) <math>\frac{\sin \angle CAD}{3.999} = \frac{\sin 35^\circ}{15.15}</math>  <math>3.999^2 = 18.25^2 + 15.15^2 - 2(18.25)(15.15) \cos \angle CAD</math>  <math>\angle CAD = 8.71^\circ</math></p> <p>(b)</p> <p>(i) </p> <p>(ii) <math>\frac{AC'}{\sin 26.29^\circ} = \frac{15.15}{\sin 145^\circ}</math>  <math>AC'^2 = 3.999^2 + 15.15^2 - 2(3.999)(15.15) \cos 26.29^\circ</math>  <math>AC' = 11.70</math></p>	<p>(K1) Use <math>\frac{1}{2} ab \sin C = 29.1</math>  (N1) 3.999//4</p> <p>(N1) 18.249//18.25</p> <p>(K1) Use cosine rule  (N1) 15.15</p> <p>(K1) Use sine rule or cosine rule  (N1) <math>8.70^\circ \leftrightarrow 8.74^\circ</math>  <math>8^\circ 42' \leftrightarrow 8^\circ 44'</math></p> <p>(P1) Triangle with <math>\angle AC'D</math> must be obtuse</p> <p>(K1) Use sine rule or cosine rule or equivalent method  (N1) 11.70</p>	<p>2</p> <p>3</p> <p>2</p> <p>1</p> <p>2</p>	<p>10</p>

No.	Solution	Scheme	Sub marks	Marks
15	<p>(a) <math>m + n + 4 + 5 = 20</math>  <math>m + n = 11</math> ----- (1)  <math>\frac{140(m) + 120(n) + 115(4) + 132(5)}{m + n + 4 + 5} = 130</math>  <math>m - n = 5</math> ----- (2)</p> <p>or <math>\frac{140m + 120n + 115(4) + 132(5)}{20} = 130</math>  <math>140 + 120n = 1480</math></p> <p>(1) + (2)</p> $2m = 16$ $m = 8$ $8 + n = 11$ $n = 3$	<p>K1 Use <math>m + n + 4 + 5 = 20</math></p> <p>K1 Use <math>\frac{\sum Iw}{\sum w} = 130</math></p> <p>K1 Solve simultaneous equation</p> <p>NI <math>m = 8</math> and <math>n = 3</math></p>	4	
(b)	$\frac{21}{P_{15}} \times 100 = 125$  $P_{15} = 16.80$	<p>K1 Use <math>\frac{P_{16}}{P_{15}} \times 100 = 125</math></p> <p>NI 16.80</p>	2	10
(c)	$132 \times \frac{100}{120}$ 110	<p>K1 Use <math>\left[ \frac{120}{100} \times \frac{x}{100} \right] \times 100 = 132</math> or equivalent</p> <p>NI 110</p>	2	
(d)	$\frac{125}{100} \times 130$ 162.5	<p>K1 Use <math>\frac{125}{100} \times 130</math></p> <p>NI 162.5</p>	2	