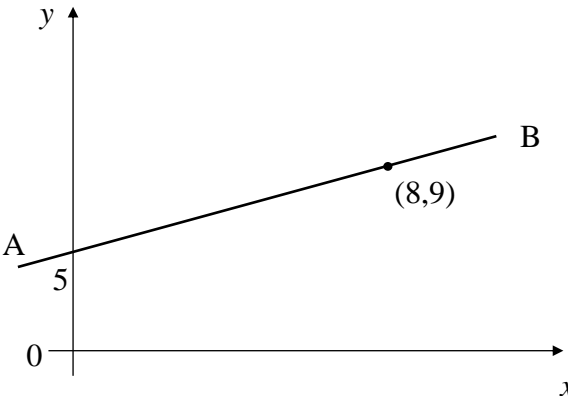
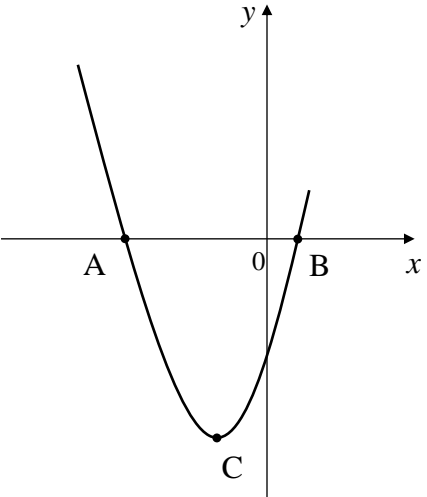
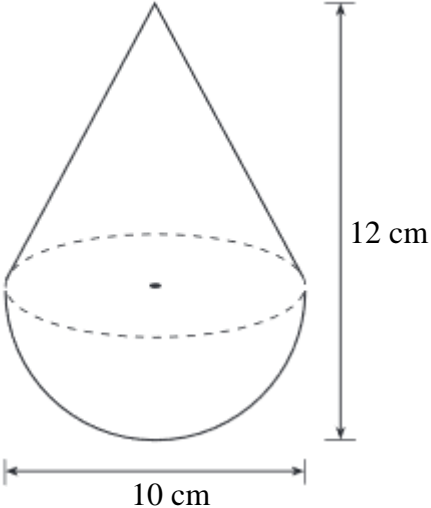


	A/B Revision 1 – Non Calculator	<b>20</b>	
<b>1</b>	Multiply out the brackets and collect like terms $(2x + 3)(5x - 1)$	<b>2</b>	
<b>2</b>	Calculate $3\frac{1}{5} \times 1\frac{1}{4}$	<b>2</b>	
<b>3</b>	A function is given as $f(x) = 10 - 2x$  (a) Evaluate $f(-2)$  (b) If $f(t) = -6$ , calculate a value for $t$	<b>1</b>  <b>2</b>	
<b>4</b>	The line AB passes through the points (0,5) and (8,9)  State the equation of the Line AB		<b>3</b>
<b>5</b>	Determine the nature of the roots of the function $f(x) = 4x^2 - 3x + 1$	<b>2</b>	
<b>6</b>	Express in the simplest form $2a^7 \times (3a^4)^2$	<b>3</b>	
<b>7</b>	The diagram shows part of the graph of $y = x^2 + 6x - 16$  (a) Find the coordinates of A and B, the $x$ -intercepts for the graph.  (b) State the coordinates of the minimum turning point C.		<b>3</b>  <b>2</b>

	A/B Revision 1 – Calculator	30
1	<p>The diagram to the right shows a circle with centre C.</p> <p>This circle has a radius of 2.6 cm</p> <p>Calculate the length of the <b>major</b> arc of this circle</p>	3
2	<p>For the triangle shown below.</p> <p>Angle <math>\angle SRT</math> is <math>104^\circ</math>  Side RT is 15 cm  Side ST = 23 cm</p> <p>Calculate the size of angle S</p>	3
3	 <p>A child's top is in the shape of a hemisphere with a cone on the top, as shown in the diagram.</p> <p>The toy is 10 cm wide and 12 cm high.</p> <p>Calculate the volume of this toy.</p> <p>Give your answer correct to <b>2 significant figures</b></p>	5
4	Factorise $3x^2 - x - 2$	2



<b>Revision 1 Non Calculator Answers</b>	
1	$(2x + 3)(5x - 1) = 10x^2 - 2x + 15x - 3 = 10x^2 + 13x - 3$
2	$3\frac{1}{5} \times 1\frac{1}{4} = \frac{16}{5} \times \frac{5}{4} = 4$
3	(a) $f(-2) = 10 - 2(-2) = 14$ (b) $10 - 2t = -6, 16 = 2t, t = 8$
4	Gradient is $m = \frac{4}{8} = \frac{1}{2}$ Equation is $y = \frac{1}{2}x + 5$
5	$b^2 - 4ac = (-3)^2 - 4 \times 4 \times 1 = -7, b^2 - 4ac < 0$ so there are no real roots
6	$2a^7 \times (3a^4)^2 = 2a^7 \times 9a^8 = 18a^{15}$
7	(a) $x^2 + 6x - 16 = 0$ $(x + 8)(x - 2) = 0$ <b>A (-8, 0), B (2, 0)</b> $x = -8$ and $x = 2$  (b) For turning point $x = -3, y = -25, C (-3, -25)$

<b>Revision 1 Calculator Answers</b>	
1	For major arc use $360^\circ - 110^\circ = 250^\circ$ Arc = $\frac{250^\circ}{360^\circ} \times \pi \times 5.2 = 11.3 \text{ cm}$
2	$\frac{\sin 104}{23} = \frac{\sin P}{15}, \sin P = \frac{15 \times \sin 104}{23} = 0.6328.., P = \sin^{-1}(0.6328...) = 39^\circ$
3	Cone $V = \frac{1}{3} \times \pi \times 5^2 \times (12 - 5) \quad V = 183.2595715..$ Hemi-sphere $V = \frac{1}{2} \times \frac{4}{3} \times \pi \times 5^3 \quad V = 261.7993878..$ Volume is $183.259 + 261.79 = 445.05895.. = 450 \text{ cm}^3$
4	$(3x + 2)(x - 1)$
3	Mean is 40 people      St Dev = $\sqrt{\frac{1454}{7}} = 14.412$ On average more people voted per hour in Dundee and the number of voters was more consistent
4	$\pounds 24412.50 = 108.5\%$ so <b><math>\pounds 22500 = 100\%</math></b>
5	$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4 \times 4 \times (-5)}}{2 \times 4} \rightarrow x = \frac{7 \pm \sqrt{129}}{8}$  $x = 2.294727.., x = -0.544727$ so <b><math>x = 2.3</math> and <math>x = -0.5</math></b>
6	Simultaneous equations $3n + 2b = 172$ Scale $3n + 2b = 172$ $2n + b = 110.50$ $4n + 2b = 221$ $n = 49$  <b>One night costs <math>\pounds 49</math></b>