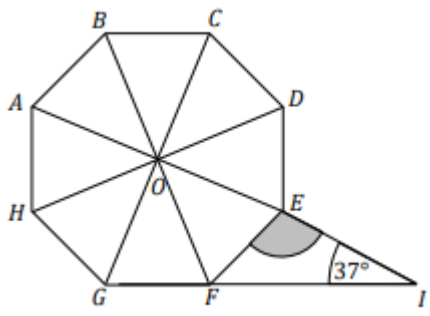
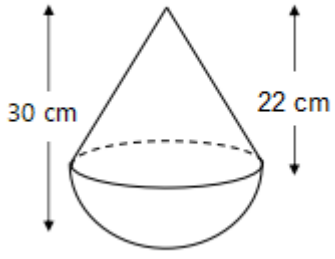
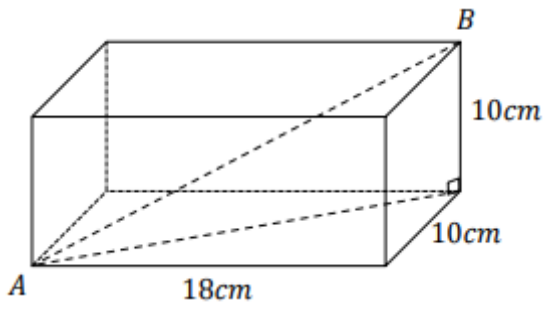
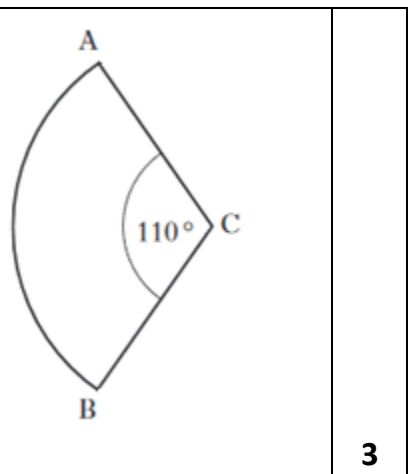


B2	Calculator Paper										
1	An industrial machine costs £176500. Its value depreciates by 4.25% each year. How much is it worth after 3 years?	3									
2	A function is defined as $f(x) = 5 + 3x$ Given that $f(b) = -22$, calculate b .	2									
3	At a farmer's market Esther buys six potatoes and four turnips. The total cost is £2.68. (a) Write down an equation to illustrate this information. At the same farmer's market Magnus buys five potatoes and three turnips. The total cost for these is £2.15 (b) Write down an equation to illustrate this information. (c) Calculate, algebraically, the cost of one potato and one turnip.	1 1 4									
4	Solve the quadratic equation $3x^2 - 4x - 9 = 0$ Give your answers correct to one decimal place.	3									
5	A runner records his 10k times during January and February. He calculates the median and semi-interquartile range for these results and his statistics (in minutes) are shown in the table below. <table border="1" data-bbox="486 1534 1181 1668"> <thead> <tr> <th></th> <th>January</th> <th>February</th> </tr> </thead> <tbody> <tr> <td>Median</td> <td>37.5</td> <td>36.4</td> </tr> <tr> <td>SIQR</td> <td>2.5</td> <td>2</td> </tr> </tbody> </table> Write two comments comparing his running times in January and February.		January	February	Median	37.5	36.4	SIQR	2.5	2	2
	January	February									
Median	37.5	36.4									
SIQR	2.5	2									

6	<p>In the diagram, ABCDEFGH is a regular octagon.</p> <ul style="list-style-type: none"> • GFI is a straight line. • Angle EIF is 37° <p>Calculate the size of the shaded angle FEI.</p>	 <p style="text-align: right;">3</p>
7	<p>Solve, algebraically, the equation</p> $\frac{4}{3}(1 - x) = 2$ <p>Give your answer as a simplified fraction.</p>	<p style="text-align: right;">3</p>
8	<p>The diagram shows a solid constructed from a cone and a hemisphere.</p> <p>The cone has a height of 22 centimetres. The solid has a height of 30 centimetres.</p> <p>Calculate the volume of the solid.</p> <p>Give your answer correctly rounded to 2 significant figures.</p>	 <p style="text-align: right;">5</p>
9	<p>Sketch the graph of $y = x(x - 6)$.</p> <p>On your sketch clearly show the points of intersection with the x-axis and the y-axis, and the coordinates of the turning point.</p>	<p style="text-align: right;">3</p>
10	<p>For the cuboid shown in the diagram, calculate the length of the diagonal AB.</p>	 <p style="text-align: right;">3</p>

11	<p>The diagram shows a sector of a circle with a centre C.</p> <p>The central angle ACB is 110°</p> <p>Arc AB is 17.9 centimetres.</p> <p>Calculate the length of the radius</p>		3
12	Determine the nature of the roots of the function $f(x) = 3x^2 + 7x + 5$	2	
38 marks			