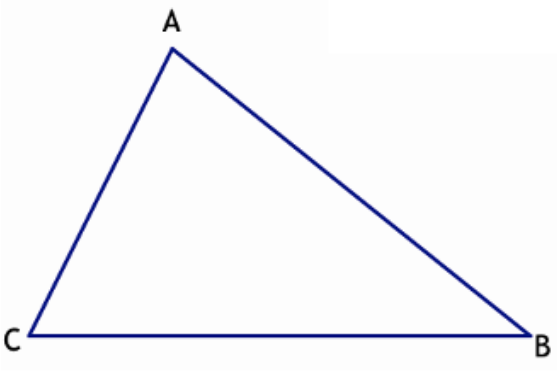
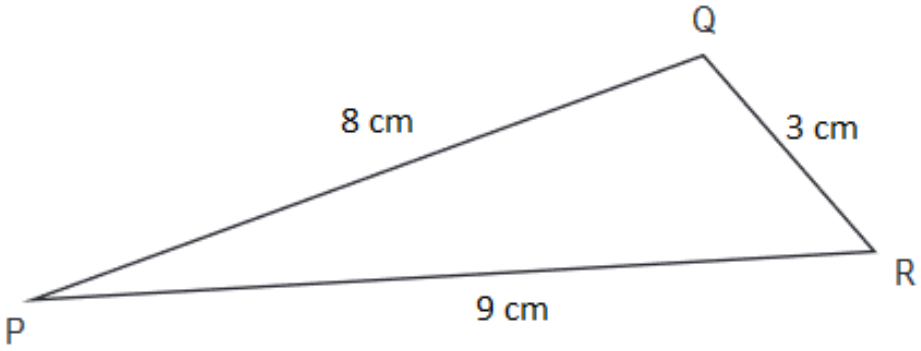
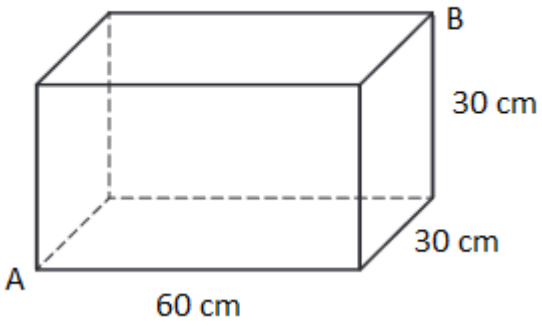
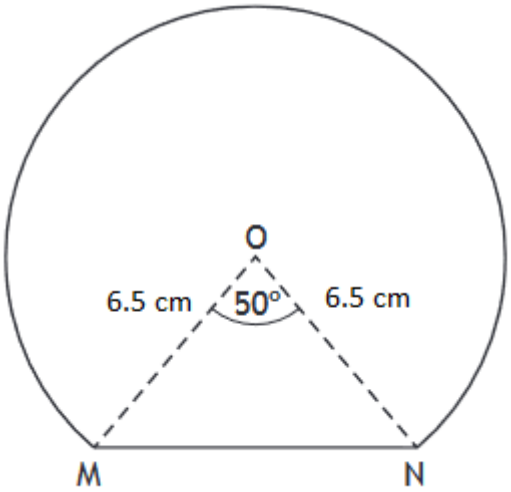
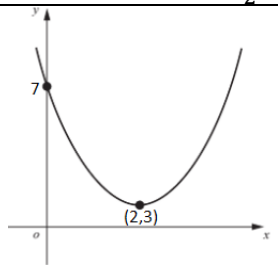
	A/B Revision 4 – Non Calculator	**20**
1	Calculate $\frac{3}{2} \times \left(\frac{1}{7} + \frac{2}{3}\right)$	**3**
2	Multiply out the brackets and collect like terms $(2x-1)^2 + (3x+1)(x+5)$	**3**
3	Solve algebraically the system of equations $6x - 5y = 13$ $4x + 3y = -2$	**3**
4	Change the subject of the formula $F = \frac{t^2+b}{c}$ to b	**2**
5	 For the triangle ABC • Side BC is 12 cm • $\sin A = 0.4$ • $\sin C = 0.3$ Calculate the length of side AB	**3**
6	(a) Show that the standard deviation for the data set 1, 1, 1, 3, 4 is equal to $\sqrt{2}$ (b) Write down the standard deviation of 101, 101, 101, 103, 104	**3** **1**
7	Evaluate $8^{\frac{2}{3}}$	**2**

	A/B Revision 4 – Calculator	**30**
1	There are 3×10^5 platelets per millilitre of blood. On average, a person has 5.5 litres of blood. On average, how many platelets does a person have in their blood? Give your answer in scientific notation.	**2**
2	A function is defined as $f(x) = 11 + 3x$. Given that $f(a) = 68$, calculate a.	**2**
3	Calculate the median and the interquartile range for this data set 26 25 13 20 19 17 17 16	**3**
4	Find the size of angle PQR.  	**3**
5	Find the equation of the straight line joining the points $(-2,5)$ and $(-5,9)$. Give the equation in its simplest form.	**3**
6	Sketch the graph of $f(x) = (x-2)^2 + 3$. On your sketch show clearly the coordinates of the turning point and the point of intersection with the y-axis	**3**
7	Determine the nature of the roots of the function $f(x) = 9x^2 - 24x + 16$	**2**
8	Simplify $n^4 \times n^{-10}$ Give your answer with a positive power	**2**

9	A cardboard box has the dimensions of length 60 cm, breadth 30 centimetres and height 30 centimetres.  Can a 70 centimetre curtain rod long be placed diagonally in the box from A to B?	**4**
10	Express $\frac{a}{b} \div \frac{a^2}{b}$ as a fraction is its simplest form	**2**
11	The shape shown below is part of a circle.  The centre of the circle is O MN is a chord of the circle Angle MON us 50° The radius of the circle is 6.5 centimetres Calculate the area of this shape.	**5**

	Revision 4 Non Calculator Answers
1	$\frac{3}{2}\times\left(\frac{1}{7}+\frac{2}{3}\right)=\frac{3}{2}\times\left(\frac{17}{21}\right)=\mathbf{\frac{17}{14}}$
2	$(2x-1)^2=(2x-1)(2x-1)=4x^2-2x-2x+1=4x^2-4x+1$ $(3x+1)(x+5)=3x^2+15x+x+5=3x^2+16x+5$ Final answer is $7x^2+12x+6$
4	$F=\frac{t^2+b}{c}$, $\quad Fc=t^2+b$, $\quad Fc-t^2=b\ \rightarrow\ \mathbf{b=FC-t^2}$
5	Using the sine rule $\frac{BC}{\sin A}=\frac{AB}{\sin C}$, $\frac{12}{0.4}=\frac{AB}{0.3}$, $AB=\frac{12\times0.3}{0.4}=\mathbf{9cm}$
6	(a) mean is 2, standard deviation is $\sqrt{\frac{8}{4}}=\sqrt{2}$ (b) Standard deviation is also $\sqrt{2}$
7	$8^{\frac{2}{3}}=\left(\sqrt[3]{8}\right)^2=2^2=4$

	Revision 4 Calculator Answers
1	$3\times10^5\times5.5\times1000=1650000000$ $\quad\mathbf{1.65\times10^9}$
2	$11+3a=68,\ 3a=57,\quad \mathbf{a=19}$
3	Order the data 13 16 17 17 19 20 25 26 Median is 18 Q_1 is 16.5, Q_3 is 22.5 so IQR is $22.5-16.5=6$
4	Using the cosine rule $\cos Q=\frac{8^2+3^2-9^2}{2\times8\times3}$, $\cos Q=-\frac{1}{6}$, $\quad Q=99.6°$
5	Gradient is $m=\frac{4}{-2}=-2$ Equation is $\mathbf{y=-2x+1}$
6	 The turning point is $(2,3)$ and the y-intercept is 7
7	$b^2-4ac=(-24)^2-4\times9\times16=0$, **so there are two real equal roots**
8	$n^4\times n^{-10}=n^{-6}=\frac{1}{n^6}$
9	Use Pythagoras $60^2+30^2=4500$, $AB=\sqrt{4500+30^2}=73.48\ cm$ or 3D Pythagoras $AB=\sqrt{30^2+30^2+60^2}=73.48\ cm$ Yes, the curtain rod will fit into the box as 70 cm < 73.5 cm
10	$\frac{a}{b}\div\frac{a^2}{b}=\frac{a}{b}\times\frac{b}{a^2}=\frac{1}{a}$
11	Area of the triangle MON is $\frac{1}{2}\times6.5\times6.5\times\sin50=16.182688\ldots$ The area of the sector MON is $\frac{310}{360}\times\pi\times6.5^2=114.2972\ldots$ The area of this shape is 16.182…+114.2972…130(.5) cm^2