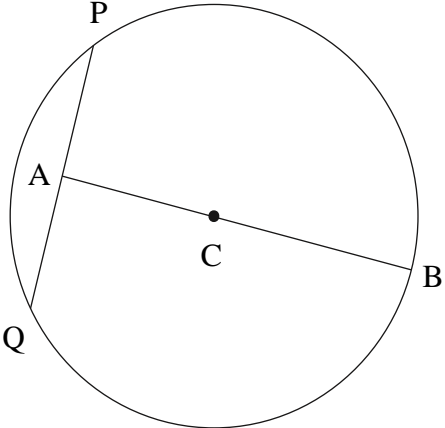
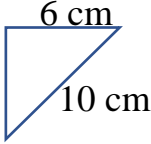


	November Non-Calculator – Revision 2	30
1	Multiply out the brackets and collect like terms $(2x + 5)(x^2 - 3x + 1)$	3
2	Solve the equation $\frac{x}{6} - \frac{1}{2} = 5$	2
3	Calculate the median and the semi-interquartile range for this data set 18 16 26 24 14 16 19 20 27 30	2
4	Solve algebraically the system of equations $2x + 3y = 3$ $5x + 2y = 13$	3
5	(a) Factorise $4x^2 - 1$ (b) Hence find the roots of the equation $4x^2 - 1 = 0$	2 2
6	Express $\frac{2}{x+1} + \frac{3}{x-1}$, $x \neq -1, x \neq 1$ as a single fraction in its simplest form	3
7	Change the subject of the formula $l = \sqrt{2t - a}$ to t	3
8	Express $\frac{6}{\sqrt{2}}$ with a rational denominator in its simplest form	2
9	A parabola has equation $y = x^2 - 6x + 11$ (a) Write the equation of the parabola in the form $y = (x - a)^2 + b$ (b) State (i) The equation of the axis of symmetry for this parabola (ii) The point of intersection with the y-axis	2 1 1
10	The radius of the circle with centre C is 10 centimetres. A is the midpoint of chord PQ The length of Chord PQ is 12 centimetres Calculate the length of the line AB	 4

Answers Non-Calculator Revision 2	
1	$(2x + 5)(x^2 - 3x + 1)$ $= 2x^3 - 6x^2 + 2x + 5x^2 - 15x + 5$ $= 2x^3 - x^2 - 13x + 5$
2	$\frac{x}{6} - \frac{1}{2} = 5$, multiply through by 6 $x - 3 = 30$, $x = 33$
3	Median is 19.5 Q_1 is 16, Q_3 is 26 SIQR is 5
4	$\begin{array}{r} 2x + 3y = 3 \\ 5x + 2y = 13 \end{array}$ <p style="text-align: center;">Scale</p> $\begin{array}{r} 10x + 15y = 15 \\ \underline{10x + 4y = 26} \\ 11y = -11, \\ y = -1, x = 3 \end{array}$
5	<p>(a) $4x^2 - 1 = (2x + 1)(2x - 1)$</p> <p>(b) $(2x + 1)(2x - 1) = 0$, $x = -\frac{1}{2}$ or $x = \frac{1}{2}$</p>
6	$\frac{2}{x+1} + \frac{3}{x-1} = \frac{2(x-1) + 3(x+1)}{(x+1)(x-1)} = \frac{5x+1}{(x+1)(x-1)}$
7	$l = \sqrt{2t - a} \rightarrow l^2 = 2t - a \rightarrow l^2 + a = 2t \rightarrow t = \frac{l^2 + a}{2}$
8	$\frac{6}{\sqrt{2}} = \frac{6\sqrt{2}}{2} = 3\sqrt{2}$
9	<p>(a) $x^2 - 6x + 11 = (x - 3)^2 + 2$</p> <p>(b) Axis of symmetry is $x = 3$, y-intercept is (0,11)</p>
10	<p>Establish a right-angled triangle</p>  <p>Use Pythagoras</p> $AC = \sqrt{10^2 - 6^2} = \sqrt{64} = 8 \text{ cm}$ <p>AB is $8 + 10 = 18 \text{ cm}$</p>