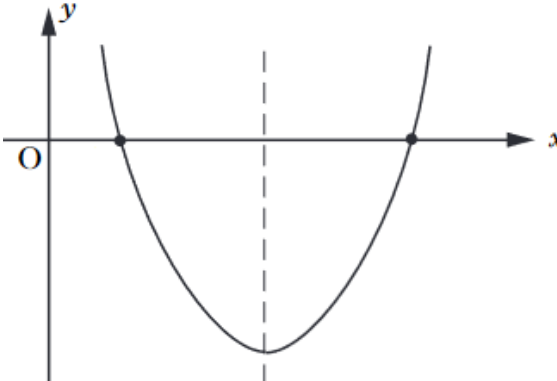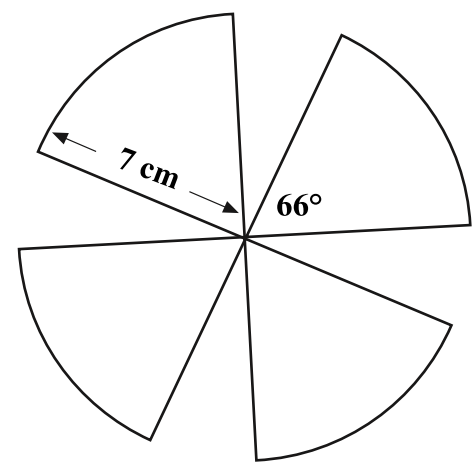|	S5 Nat 5 Revision 3 – Calculator	30
1	There are 3×10^5 platelets per millilitre of blood. On average, a person has 5.5 litres of blood. On average, how many platelets does a person have in their blood? Give your answer in scientific notation.	**2**
2	Solve the inequality $\qquad\qquad 9 - 3(x - 1) > 15$	**3**
3	A straight line passes through the points $C(6,9)$ and $D(2a, a^2)$. Find the gradient between these two points. Give your answer as a fraction in its simplest form	**3**
4	The graph below shows part of a parabola with the equation $\qquad y = x^2 - 10x + 19$. (a) Write the equation of the parabola in the form $y = (x - a)^2 + b$ (b) State the equation of the axis of symmetry for this parabola. (c) State the coordinates of the turning point.	**5**
5	Express $\quad \sqrt{50} - \sqrt{2} + \sqrt{18}$ as a surd in the simplest form	**3**
6	A fan is made from four identical plastic blades. Each blade is a sector of a circle with a radius of 7 cm. The angle at the centre of each sector is $66°$. Calculate the **total** area of plastic required to make the blades for this fan.	**4**

7	Solve algebraically the system of equations $$5x - 2y = 5$$ $$2x + 2y = 21$$	3
8	Simplify $\dfrac{10a^7b^3}{2ab^5}$ Give your answer with positive powers.	4
9	Express $$\frac{4}{x} + \frac{2}{x+1}, \quad x \neq 0, x \neq -1$$ As a single fraction in its simplest form.	3

	Revision 3 Non Calculator Answers
1	$3 \times 10^5 \times 5.5 \times 1000 = 1650000000 \qquad \mathbf{1.65 \times 10^9}$
2	$9 - 3x + 3 > 15 \quad \rightarrow \quad 12 - 3x > 15 \quad \rightarrow \quad -3 > 3x \qquad \mathbf{-1 > x \text{ or } x < -1}$
3	$gradient = \dfrac{a^2 - 9}{2a - 6} = \dfrac{(a+3)(a-3)}{2(a-3)} = \dfrac{a+3}{2}$
4	$x^2 - 10x + 19 = (x-5)^2 - 6$ The axis of symmetry is $x = 5$ and the turning point is $(5, -6)$
5	$\sqrt{50} - \sqrt{2} + \sqrt{18} \ = 5\sqrt{2} - \sqrt{2} + 3\sqrt{2} = \mathbf{7\sqrt{2}}$
6	Area of sector $= \dfrac{66}{360} \times \pi \times 7^2 = 28.22197 \ cm^2$ Area of fan is $4 \times 28.22 = 112.388 = \ \mathbf{113 \ cm^2}$.
7	Simultaneous equations $5x - 2y = 5 \qquad\qquad$ Scale $\qquad\qquad 15x - 6y = 15$ $2x + 3y = 21 \qquad\qquad\qquad\qquad\qquad \underline{4x + 6y = 42}$ $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad 19x = 57$ $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \boldsymbol{x = 3, y = 5}$
8	$(10 \div 2)(a^{7-1})(b^{3-5}) = 5a^6b^{-2} = \dfrac{\mathbf{5a^6}}{\boldsymbol{b^2}}$
9	$\dfrac{4(x+1)}{x(x+1)} + \dfrac{2x}{x(x+1)} = \dfrac{4x + 4 + 2x}{x(x+1)} = \dfrac{\mathbf{6x + 4}}{\boldsymbol{x(x+1)}}$