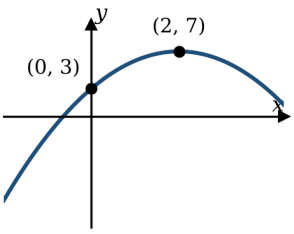
Day 191	IGCSE 10-a-day
1 Write these numbers in order of size, starting with the smallest. 95%, $\frac{2}{3}$, $\frac{7}{20}$, 0.83	
2 $y = (x + 2)(x + 3)$ Find $\frac{dy}{dx}$.	
3 A concrete slab in the shape of a cuboid weighs 210 N. Its smallest face has area 250 cm^2. Its largest face has area 1,500 cm^2. Pressure = force ÷ area Work out (a) the greatest pressure and (b) the least pressure the concrete slab can exert on the ground, in N/m^2.	
4 The curve $y = -x^2 + 5x + 2$ and the line $y = 8x + 4$ intersect at two points A and B, where A has the smaller x coordinate. (a) Find the coordinates of A and B. (b) Find the gradient of the curve at A and at B.	
5 The diagram shows a sketch of a quadratic curve with a turning point at (2, 7). The curve crosses the y-axis at (0, 3). Find an equation of the curve. Give your answer in the form $y = ax^2 + bx + c$. 	

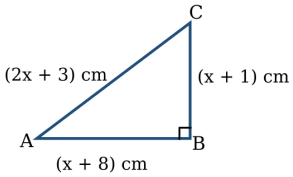
Day 191 **IGCSE 10-a-day**

6 $y = \sqrt{x}(x + 2)$

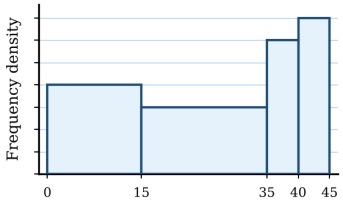
Find $\frac{dy}{dx}$. Give each term of your answer in the form ax^n.

7 A bag has 4 blue and 6 red beads.
Three beads are taken at random without replacement.
(a) Work out the probability that all three are red.
(b) Work out the probability that at least one is blue.

8 ABC is a right-angled triangle with sides (x + 8) cm, (x + 1) cm and (2x + 3) cm. The longest side is (2x + 3) cm.
(a) Find the value of x.
(b) Work out the area of the triangle.
The diagram is not drawn accurately.



9 The histogram shows the ages, in years, of some visitors.
The bar for 35 to 40 represents 30 visitors.
Estimate the number of visitors with a value greater than 36.



10 An alloy is made by mixing 20 cm^3 of nickel with 100 cm^3 of lead.
The density of nickel is 8.9 g/cm^3. The density of lead is 11.3 g/cm^3.
Work out the density of the alloy.