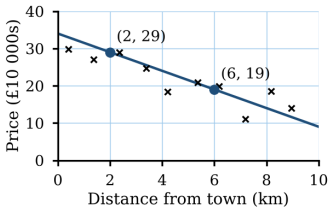
Day 65	IGCSE 10-a-day
1 A particle P moves in a straight line. After t seconds its displacement from a fixed point O is s metres, where $s = -t^3 + 6t^2 - 5t$ $(t > 0)$ Find (a) the velocity of P, (b) the acceleration of P, when $t = 2$.	
2 Write $0.3\dot{2}7\dot{1}$ as a fraction in its simplest form.	
3 The scatter graph shows distance from town (x) and price (y). The equation of the line of best fit is $y = -2.5x + 34$. (a) Estimate y when $x = 7$. (b) Explain why an estimate of y when $x = 25$ may be unreliable. 	
4 Work out the square root of 4×10^{-2}. Give your answer in standard form.	
5 The positive numbers x and y satisfy $x + y = 3$. Find the greatest possible value of x^2y, showing that it is the greatest.	

Day 65	IGCSE 10-a-day
6 A metal pipe is a hollow cylinder with outer radius 10 cm and inner radius 9.5 cm. (Calculator) The density of the metal is 2.7 g/cm^3. The mass of the pipe is 3.31 kg. Work out the length of the pipe. Give your answer in centimetres correct to 3 significant figures.	
7 P is inversely proportional to t. When t = 2, P = 3. (a) Find a formula for P in terms of t. (b) Find the value of P when t = 3.	
8 A closed cylinder (a tin) has radius r cm, height h cm and total surface area 294π cm^2. (a) Show that its volume, V cm^3, is V = $147\pi r - \pi r^3$. (b) Find the maximum value of V in terms of π, and show that h = 2r when V is a maximum.	
9 p is directly proportional to q. When q = 5, p = 30. When q = 6, p = a. When q = b, p = 48. Work out the values of a and b.	
10 a = 6.21 and b = 61.5, both correct to 3 significant figures. Work out a × b. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	