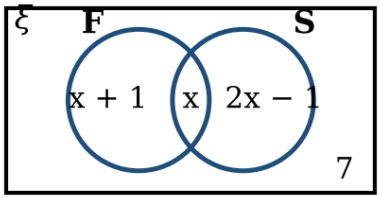
Day 10	IGCSE 10-a-day
1 ABC is an isosceles triangle with AB = AC. Angle BAC = (4x + 10)° Angle ABC = (x + 22)° (a) Work out the value of x. (b) Work out the size of angle BAC.	
2 Simplify fully $\frac{8x^3y^5 \times 9x^6y}{8x^6y^2}$ Give your answer in the form kx^ay^b	
3 $g(x) = x^2 + 4x + 1$ for $x \leq -2$. (a) Find the range of g. (b) Find $g^{-1}(x)$.	
4 A church bell rings every 5 minutes. Another bell rings every 6 minutes. A third bell rings every 8 minutes. They all ring together at 6:00 am. How many times do they all ring together between 6:00 am and 3:00 pm, including both 6:00 am and 3:00 pm if they do?	
5 The graph of $y = x^2 - 2x + 2$ has a turning point at P. Find the equation of the tangent to the curve at P.	

Day 10	IGCSE 10-a-day
6 The set A has 7 elements. (a) Write down the number of subsets of A. (b) Write down the number of proper subsets of A.	
7 Tap A can fill an empty tank in 10 minutes. Tap B can fill an empty tank in 15 minutes. Both are turned on at the same time. How long do they take to fill an empty tank?	
8 A curve has equation $y = 4x + \frac{8}{\sqrt{x}}$ for $x > 0$. Find the coordinates of the stationary point and determine its nature.	
9 The Venn diagram shows how many of 19 students study French (F) or Spanish (S). (a) Work out the value of x. (b) A student is chosen at random from those who study Spanish. Work out the probability that this student also studies French. 	
10 The curve $y = 2x^3 + 12x^2 + 10x - 3$ has gradient -8 at two points. Find the x coordinates of these points.	