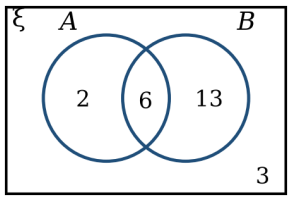
Day 123	IGCSE 10-a-day
1 A ball is thrown upwards. Its height above the ground, h metres, after t seconds is given by $h = -2t^2 + 16t$ (a) Work out the greatest height reached by the ball. (b) Work out the velocity of the ball when t = 9. State whether it is moving up or down.	
2 The Venn diagram shows information about 24 families. A: have a garden B: have a car (a) Find $n(A \cup B)'$. (b) Find $n(A \cup B)$. 	
3 The equation of a curve is $y = -2x^{3/2} + 3x - 8\sqrt{x}$. Work out the gradient of the curve at the point where x = 9.	
4 Expand and simplify $(2x + 3)(x + 2)(x - 1)$	
5 A and B are two events. P(A) = 0.8, P(B) = 0.4 and P(A or B) = 0.88 (a) Work out P(A and B). (b) Are A and B independent? You must show your working.	

Day 123	IGCSE 10-a-day
6 Solve the simultaneous equations $x^2 + y^2 = 25$ $x + y = 1$	
7 The HCF of two numbers is 8 and their LCM is 264. The smaller number is 24. Work out the larger number.	
8 ABCD is a rectangle with AB = 6 cm and AD = 10 cm. A point P inside the rectangle is such that AP ≤ 6 cm and P is nearer to A than to B. Work out the area of the region in which P can lie. Give your answer in terms of π and surds.	
9 A particle moves in a straight line. After t seconds its displacement from O is s metres, where $s = 24t^{\frac{3}{2}} + t^2$ $(t \geq 0)$ Find the velocity and the acceleration of the particle when t = 4.	
10 p = 12.5 and r = 8.9, each correct to 1 decimal place. q = 2.99, correct to 2 decimal places. Work out the lower bound of $\frac{p+q}{r}$. Give your answer correct to 3 significant figures. (Calculator)	