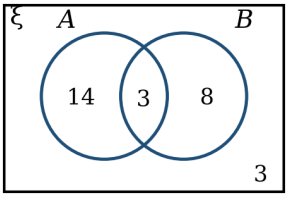
Day 305	IGCSE 10-a-day
1 Differentiate $6x^4 + 6x^2 + 2x$ with respect to x.	
2 A flight leaves London at 23:20 (London time). It takes 12 hours 40 minutes. When it is 12:00 in London it is 04:00 in Los Angeles. At what time, in Los Angeles time, does the flight land? Say if it is on a different day.	
3 The ratio of men to women in a school is 3 : 1. 25% of the men and 55% of the women own a car. What percentage of all of these students own a car?	
4 The Venn diagram shows information about 28 employees. A: speak German B: speak Italian (a) Find n(A′ ∪ B′). (b) Find n(A′ ∩ B). 	
5 A laptop loses 10% of its value each year. After 2 years it is worth £25,515. Work out its value when it was new. (Calculator)	

Day 305	IGCSE 10-a-day
6 The probability that it rains is $\frac{3}{4}$. If it rains, the probability that Sam is late is $\frac{2}{3}$. If it does not rain, the probability is $\frac{1}{6}$. (a) Work out the probability that Sam is late. (b) Given that Sam is late, work out the probability that it rained.	
7 A tank is a cuboid with a square base of side x metres and height h metres, and has a closed top. Its volume is 8 m^3. (a) Show that the total outside surface area, A m^2, is $A = 2x^2 + \frac{32}{x}$. (b) Find the minimum possible value of A, showing that it is a minimum.	
8 Work out the exact value of $\sin 30° \div \tan 45°$ Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.	
9 A is the point $(6, -8)$ and B is the point $(-2, 2)$. Find an equation of the perpendicular bisector of AB. Give your answer in the form $ax + by = c$, where a, b and c are integers.	
10 $f(x) = x^3 + kx^2 + 75x + 1$, where k is a constant. Given that f is an increasing function for all values of x, find the range of possible values of k.	