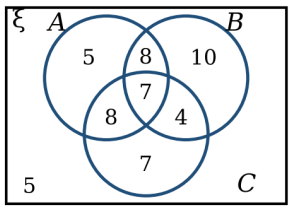
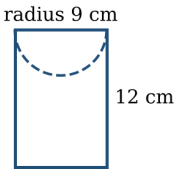
Day 225	IGCSE 10-a-day
1 $f(x) = 3x - 2$ and $g(x) = kx + 3$, where k is a constant. $fg(x) = gf(x)$ for all values of x. Find the value of k.	
2 $y = (x + 6)(x + 1)$ Find $\frac{dy}{dx}$.	
3 Simplify fully $\frac{5x^2 - 80}{x^2 + 3x - 28}$	
4 The width of a table is 518 cm, correct to 3 significant figures. Write down the error interval for the width of a table, using w.	
5 The Venn diagram shows information about 54 pupils. A: play football B: play netball C: play rugby (a) Find $n(A \cup C)$. (b) Find $n(A \cup B \cup C)'$.  	

Day 225 **IGCSE 10-a-day**

6 A solid cylinder of radius 9 cm and height 12 cm has a hemispherical hollow of the same radius cut out of the top.
Work out the volume of the solid that is left.
Give your answer in terms of π.



7 A curve has equation $y = x + \frac{3}{x}$.
Find the coordinates of the points on the curve where the gradient is -2.

8 There are 200 cells in a sample. The number of cells is multiplied by 4 every day.
After how many days will there first be more than 100,000 cells?

9 A particle moves in a straight line. After t seconds, its displacement from a fixed point O is s metres, where
$s = -t^3 + 6t^2 + 10t$ for $t \geq 0$
Find the greatest speed of the particle, and the value of t at which it occurs.

10 The table gives information about the masses of some eggs.
An estimate for the mean is 11.5.
Work out the value of x.

Mass, m (g)	Frequency
$0 < m \leq 5$	19
$5 < m \leq 10$	8
$10 < m \leq 15$	20
$15 < m \leq 20$	x
$20 < m \leq 25$	9