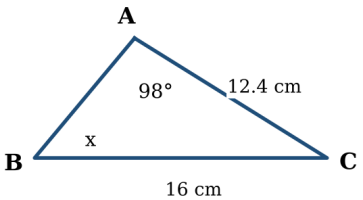
Day 324	IGCSE 10-a-day
1 A metal pipe is a hollow cylinder of length 40 cm. (Calculator) The outer radius is 6 cm and the inner radius is 5 cm. The density of the metal is 2.7 g/cm^3. Work out the mass of the pipe. Give your answer in kilograms correct to 3 significant figures.	
2 $y = (x + 6)(x - 5)$ Find $\frac{dy}{dx}$.	
3 The 5-digit number 737k2 is a multiple of 12. k is a single digit. Find all the possible values of k.	
4 Solve $2 \cos x° + 3 = 5$ for $0 \leq x \leq 360$	
5 Angle B is acute. Work out the size of angle ABC. Give your answer correct to 1 decimal place. (Calculator) 	

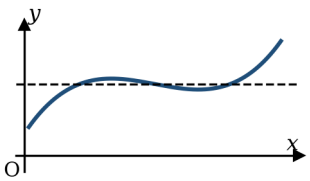
Day 324 **IGCSE 10-a-day**

6 24 painters can paint a hall in 24 days.
After 3 days, 3 of the painters leave. The rest carry on working at the same rate.
How many more days does it take to finish?

7 A curve has equation $y = x^3 + 3x^2 + 4x + 6$.
Show that y is an increasing function for all values of x.

8 Tin A holds red paint and white paint in the ratio 4 : 2.
Tin B holds red paint and white paint in the ratio 5 : 2.
36 litres from tin A and 14 litres from tin B are mixed.
Work out the ratio of red paint to white paint in the mixture.

9 The diagram shows a sketch of the curve $y = x^3 - 9x^2 + 24x + 8$ and the line y = k.
The line meets the curve at three different points.
Find the range of possible values of k.



10 In triangle OAB, **OA** = **a** and **OB** = **b**.
M is on OA and N is on OB, with OM : MA = ON : NB = 2 : 1.
(a) Show that MN is parallel to AB.
(b) Write down the ratio MN : AB.

