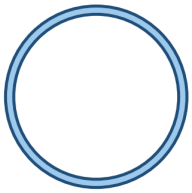
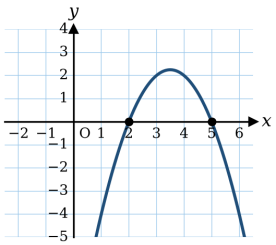
Day 247	A Tier 10-a-day
1 9 painters take 21 days to paint a hall. All the painters work at the same rate. How many painters are needed to paint a hall in 9 days?	
2 Write $(7^5)^2 \div 7^2$ as a single power of 7.	
3 A shop sells coffee in 2 different sizes. Small bag: 400 g for £1.40 Large bag: 1000 g for £3.60 Which bag is the best value for money? You must show your working.	
4 (a) Show that $0.\dot{1}\dot{4} = \frac{14}{99}$ (b) Hence write $5.\dot{1}\dot{4}$ as a mixed number in its simplest form.	
5 Solve $4x^2 + 9x - 8 = 0$ Give your solutions correct to 2 decimal places. (Calculator)	

Day 247 **A Tier 10-a-day**

6 The diagram shows the cross-section of a metal pipe.
The outer radius is 11 cm and the inner radius is 10 cm.
The pipe is 25 cm long.
Work out the volume of metal used. Give your answer to 3 significant figures. (Calculator)



7 The diagram shows the graph of $y = -x^2 + bx + c$.
Find the value of b and the value of c.



8 An isosceles triangle has two equal sides of length (2x + 6) cm and (3x + 1) cm.
The third side is 12 cm.
Work out the perimeter of the triangle.

9 Write as a single fraction

$$\frac{-2}{(x+1)} + \frac{3}{(x+5)}$$

10 A cyclist travels 610 metres in 4.7 seconds. The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second.
(a) Work out the upper bound and the lower bound of the speed in m/s.
(b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.