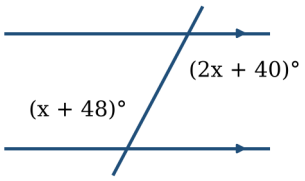
Day 238	A Tier 10-a-day
1 By rounding each number to 1 significant figure, estimate the value of $\frac{7.9 \times 2.1}{0.35}$	
2 The diagram shows two parallel lines crossed by a straight line. (a) Work out the value of x. (b) Work out the size of the angle marked (2x + 40)°. The diagram is not drawn accurately. 	
3 f(x) = 3x − 6 g(x) = x^2 + 4 Solve fg(x) = 114	
4 One rice grain has a mass of 4×10^{-3} g. A sample contains 8×10^{7} rice grains. Work out the total mass of the sample. Give your answer in standard form.	
5 Solve $x^2 + 6x + 2 = 0$ by completing the square. Give your answers in surd form.	

Day 238 **A Tier 10-a-day**

6 There are 120 passengers on a plane.
60% of the passengers are children.
50% of the children are under 5 years old.
How many passengers are children under 5?

7 The mean of 4 numbers is 56.
Another number is added. The mean of the 5 numbers is now 62.
Work out the number that was added.

8 The point P(15, 8) lies on a circle with centre O(0, 0).
(a) Work out the equation of the circle, in the form $x^2 + y^2 = r^2$.
(b) Find the equation of the tangent to the circle at P.

9 A shop sells pasta in 2 different sizes.
Small bag: 200 g for 55p
Large bag: 250 g for 70p
Which bag is the best value for money? You must show your working.

10 A, B, C and D are points on a circle. AC and BD meet at E.
Angle BAC = 33° and angle ACD = 49°.
Work out the size of angle x (angle AEB).
Give reasons for your working.

