Day 41	S Tier 10-a-day
1 Work out $(7.3 \times 10^{-8}) \times (2.3 \times 10^{6})$ Give your answer in standard form.	
2 A right-angled triangle has hypotenuse 11.9 cm and one other side 4.3 cm, both correct to 1 decimal place. (Calculator) Work out the lower bound of the length of the third side. Give your answer correct to 3 significant figures.	
3 Solve $12x^2 + 20 = 31x$	
4 A concrete slab in the shape of a cuboid weighs 420 N. Its smallest face has area 250 cm^2. Its largest face has area 2,000 cm^2. Pressure = force ÷ area Work out (a) the greatest pressure and (b) the least pressure the concrete slab can exert on the ground, in N/m^2.	
5 Given that $\sqrt{48} - \sqrt{12} = \sqrt{n}$, find the value of n.	

Day 41 **S Tier 10-a-day**

6 A rectangle has length (3x + 6) cm and width (x + 2) cm.
The area of the rectangle is 75 cm^2.
(a) Show that $3x^2 + 12x - 63 = 0$
(b) Work out the perimeter of the rectangle.

7 The table shows information about 119 children.
(a) A child who chooses swimming is chosen at random. Work out the probability that this child is a boy.
(b) Two of the 119 children are chosen at random. Work out the probability that both are boys.

	Tennis	Football	Swimming
Boys	18	27	20
Girls	28	7	19

8 A circle has centre C(−4, −4) and passes through the point P(3, 1).
Find an equation of the circle.

9 The area of a circle is 96 cm^2, correct to the nearest cm^2.
Work out the upper bound of the radius of the circle.
Give your answer correct to 3 significant figures. (Calculator)

10 A ship leaves a port P and travels 96 km on a bearing of 320° to Q. (Calculator)
It then travels 60 km on a bearing of 060° to R.
(a) Work out the distance PR.
(b) Work out the bearing of R from P.
Give distances to 1 decimal place and the bearing to the nearest degree.