Day 44	S Tier 10-a-day
1 Given that $\sqrt{12} - \sqrt{3} = \sqrt{n}$, find the value of n.	
2 A concrete slab in the shape of a cuboid weighs 930 N. Its smallest face has area 250 cm^2. Its largest face has area 2,500 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.	
3 Solve the simultaneous equations $-x - 3y = 5$ $-4x + 2y = -22$	
4 Leila and Rhys live 280 km apart. At 10:00 they set off towards each other on the same road. Leila drives at 80 km/h and Rhys drives at 80 km/h. (a) At what time do they meet? (b) How far from Leila's home do they meet?	
5 A bag contains counters. $\frac{3}{5}$ of the counters are red and $\frac{1}{4}$ of the counters are blue. The rest of the counters, 18 of them, are green. How many counters are in the bag?	

Day 44	S Tier 10-a-day
6 F is inversely proportional to d. When d = 4, F = 2. (a) Find a formula for F in terms of d. (b) Find the value of d when F = 1.	
7 A runner covers 500 metres, correct to the nearest 50 metres, in a time of 23.6 seconds, correct to 1 decimal place. (Calculator) Work out the upper bound of the runner's average speed in metres per second. Give your answer correct to 3 significant figures.	
8 A and B are the points (0, 4) and (−12, 14). AB is a diameter of a circle. Find an equation of the circle.	
9 ABCD is a rectangle with AB = 10 cm and AD = 9 cm. A point P inside the rectangle is such that AP ≤ 8 cm and P is nearer to AB than to AD. Work out the area of the region in which P can lie. Give your answer in terms of π.	
10 Evan and Leila share some money in the ratio 4 : 5. Evan gives Leila £32. The ratio of their money is now 2 : 7. How much money do they have altogether?	