Day 364	S Tier 10-a-day
1 A flight leaves London at 20:25 (London time). It takes 7 hours 25 minutes. When it is 12:00 in London it is 14:00 in Cairo. At what time, in Cairo time, does the flight land? Say if it is on a different day.	
2 Make r the subject of $P = 5\sqrt{r - 5} + 4$	
3 Work out $(5.4 \times 10^7) + (9.2 \times 10^5)$ Give your answer in standard form.	
4 E is directly proportional to v. When v = 4, E = 2. (a) Find a formula for E in terms of v. (b) Work out the positive value of v when E = 3.	
5 Write $\sqrt{28} + \sqrt{252} + \sqrt{175}$ in the form $a\sqrt{7}$ where a is an integer.	

Day 364	S Tier 10-a-day
6 A spinner numbered 1 to 4 and a spinner numbered 1 to 5 are each thrown once. The first score and the second score are recorded. (a) Work out the probability that the sum is greater than 7. (b) Given that the first number is even, work out the probability that the sum is greater than 7.	
7 A walker leaves a camp P and travels 84 km on a bearing of 205° to Q. (Calculator) It then travels 114 km on a bearing of 330° 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.	
8 V is directly proportional to the cube of r. When r = 2, V = 16. (a) Find a formula for V in terms of r. (b) Find the value of r when V = 432.	
9 A radioactive sample has a mass of 800 g. Its mass halves every 12 hours. (a) Work out the mass after 24 hours. (b) After how many hours will the mass first be less than 20 g?	
10 OAB is a triangle. OA = **a** and OB = **b**. M is on OA with OM : MA = 2 : 1. N is on OB with ON : NB = 1 : 1. AN and BM intersect at X. (a) Find BM in terms of **a** and **b**. (b) Find OX in terms of **a** and **b**. The diagram is not drawn accurately.  	