Day 89	A Tier 10-a-day
1 Solve $x^2 + 8x + 4 = 0$ by completing the square. Give your answers in surd form.	
2 The probability that Omar scores a goal is 0.1. The probability that Grace scores a goal is 0.7. The two events are independent. Work out the probability that neither Omar nor Grace will score a goal.	
3 XY is a straight line of length 8 cm. A point S moves so that it is always the same distance from X and from Y. Describe the locus of S.	
4 Nadia invests £4,500 in an investment bond. (Calculator) The account pays compound interest at 4% per year. Work out the total interest earned after 5 years.	
5 Solve $2x^2 - 6x - 7 = 0$ Give your solutions correct to 2 decimal places. (Calculator)	

Day 89	A Tier 10-a-day
6 a : b = 1 : 2 b : c = 1 : 4 (a) Work out the ratio a : b : c (b) a, b and c add up to 44. Work out the value of c.	
7 The line L has equation $y = \frac{2}{3}x - 5$ Find the equation of the line that is perpendicular to L and passes through the point $(0, -2)$.	
8 Without using a calculator, work out the exact value of $2\cos 45° + 2\tan 30°$ Give your answer in its simplest form.	
9 Expand and simplify $(6 - 2\sqrt{7})^2$ Give your answer in the form $a + b\sqrt{c}$	
10 Ship A sails 24 miles from a port on a bearing of 265°. Ship B sails 10 miles from the same port on a bearing of 300°. (Calculator) Work out the distance between the two ships. Give your answer to 3 significant figures.	