Day 10	S Tier 10-a-day
1 Carlos invests £4,500 for 8 years at 6% per year compound interest. Work out the value of the investment at the end of the 8 years. Give your answer to the nearest penny. (Calculator)	
2 Write these numbers in order of size, starting with the smallest. 32%, 83%, $\frac{3}{4}$, 54%	
3 The curve $y = -x^2 + 12x - 11$ crosses the x-axis at the points A and B. (a) Find the coordinates of A and B. (b) Find the coordinates of the maximum point of the curve.	
4 Solve $2 \sin x + 1 = 0$ for $0° \leq x \leq 360°$. (Calculator) Give your answers correct to 1 decimal place.	
5 a = 35 and b = 13, both correct to the nearest whole number. Work out the lower bound of a + b.	

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6 The point P(−4, 1) lies on the graph of y = f(x). Write down the coordinates of the image of P on the graph of (a) y = f(x − 3) (b) y = 2f(x)	
7 A point A is on level ground in line with the base of a cliff. (Calculator) The angle of elevation of the top of the cliff from A is 51°. B is a point on the same line, 100 m further from the cliff than A. The angle of elevation of the top of the cliff from B is 34°. Work out the height of the cliff. Give your answer to 1 decimal place.	
8 In an animal shelter, the ratio of the number of cats to the number of dogs is 3 : 7. Then 17 cats are removed and 8 more dogs are added. The ratio is now 1 : 6. How many cats were there at the start?	
9 The volume of a cube is 655 cm^3, correct to the nearest cm^3. Work out the lower bound of the edge length of the cube. Give your answer correct to 3 significant figures. (Calculator)	
10 Make t the subject of $T = \frac{4t + 6}{2t - 4}$	