Day 66	A Tier 10-a-day
1 A ship leaves a port and travels 15 km on a bearing of 215°. (Calculator) It then travels 8 km on a bearing of 125°. (a) Work out how far it is now from the port. (b) Work out the bearing of its final position from the port. Give your answer to the nearest degree.	
2 Solve $-3x + 8 > 23$	
3 The probability that Ella wins a game is 0.6. The probability that Owen wins a game is 0.7. The two events are independent. Work out the probability that exactly one of them will win a game.	
4 Aisha runs around a track in 70 seconds. Sara runs around the same track in 40 seconds. They start together at the start line and keep running. How many laps will each have run when they are next together at the start line?	
5 Change 4.5 m^2 to cm^2.	

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6 The size of each angle of a quadrilateral is shown as an expression: $(x + 25)°$, $(2x + 5)°$, $(3x + 40)°$, $(x + 52)°$ Work out the value of x.	
7 Prove that $(n + 5)^2 - (n - 5)^2$ is a multiple of 4 for any integer n.	
8 The value of an investment grows by 10% each year. (Calculator) After 3 years it is worth £47,916. Work out its value at the start.	
9 The graph of $y = f(x)$ has a maximum point at $(-3, 5)$. Write down the coordinates of the turning point of the graph of (a) $y = 3f(x)$ (b) $y = f(-x)$	
10 Rationalise the denominator of $\frac{31}{6 + \sqrt{5}}$ Give your answer in the form $a + b\sqrt{c}$ where a and b are integers.	