Day 12	S Tier 10-a-day
1 Each interior angle of a regular polygon is 160°. Work out the number of sides of the polygon.	
2 The number of members of a club is decreased by 40% in one year. The next year the number of members is decreased by 20%. There are now 432 members. How many members were there to begin with?	
3 Solve the simultaneous equations $3x - 4y = 28$ $-x + 2y = -12$	
4 The HCF of two numbers is 3 and their LCM is 42. One of the numbers is 6. Work out the other number.	
5 Here are the first five terms of a quadratic sequence. 5, 12, 27, 50, 81 Find an expression for the nth term.	

Day 12 **S Tier 10-a-day**

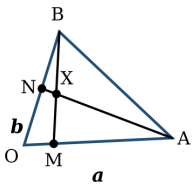
6 a = 70 and b = 48,
both correct to the nearest whole number.
Work out the lower bound of a + b.

7 The table shows the daily visitors over six periods.
The 3-point moving average centred on Thu is 20.
(a) Work out the value of x.
(b) Work out the 3-point moving average centred on Fri.

	Mon	Tue	Wed	Thu	Fri	Sat
Value	26	26	23	x	10	14

8 Solve $\frac{6}{x-5} + \frac{6}{x+5} = \frac{1}{2}$

9 OAB is a triangle. OA = **a** and OB = **b**.
M is on OA with OM : MA = 1 : 4. 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.



10 A factory makes 20,000 parts. 10% of them are faulty.
A scanner flags 80% of faulty parts and wrongly flags 10% of parts that are not faulty.
A part is chosen at random from the parts flagged by the scanner.
Work out the probability that this part is faulty.