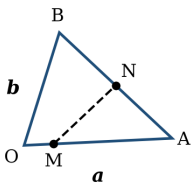
Day 351	S Tier 10-a-day
1 Work out $(3\frac{1}{2} - \frac{1}{2}) \div 2\frac{2}{5}$ Give your answer as a mixed number or a fraction in its simplest form.	
2 The 2nd term of an arithmetic sequence is 2. The 5th term of the sequence is 26. (a) Find an expression for the nth term of the sequence. (b) Is 266 a term of the sequence? You must show your working.	
3 ABC is an isosceles triangle with AB = AC. Angle BAC = $(4x - 10)°$ Angle ABC = $(3x - 40)°$ (a) Work out the value of x. (b) Work out the size of angle BAC.	
4 Work out $(8.8 \times 10^5) \div (4 \times 10^6)$ Give your answer in standard form.	
5 OAB is a triangle. OA = **a** and OB = **b**. M is on OA with OM : MA = 1 : 4. N is on AB with AN : NB = 1 : 1. (a) Find ON in terms of **a** and **b**. (b) Find MN in terms of **a** and **b**. The diagram is not drawn accurately. 	

Day 351 **S Tier 10-a-day**

6 Write $20^3 \times 4^2$ as a product of powers of prime numbers.

7 The table gives information about the times taken by some people to travel to work.
An estimate for the mean is 20.1.
Work out the value of x.

Time, t (minutes)	Frequency
$10 < t \leq 15$	6
$15 < t \leq 20$	20
$20 < t \leq 25$	x
$25 < t \leq 30$	8

8 T is inversely proportional to the square root of l.
When l = 4, T = 2.
(a) Find a formula for T in terms of l.
(b) Find the value of l when T = 4.

9 The probability that a light bulb in a hallway fails in any month is $\frac{1}{4}$.
Events on different occasions are independent.
Work out the probability that this happens at least once in 5 months.
Give your answer correct to 3 significant figures. (Calculator)

10 Solve the simultaneous equations
$x^2 + y^2 = 85$
$y = -x - 1$