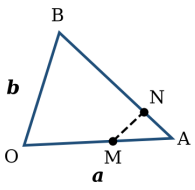
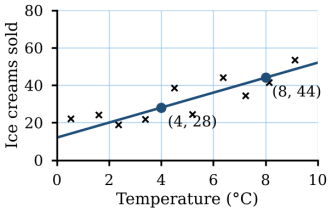
Day 341	S Tier 10-a-day
1 The 6th term of an arithmetic sequence is 33. The 11th term of the sequence is 43. (a) Find an expression for the nth term of the sequence. (b) Is 99 a term of the sequence? You must show your working.	
2 The ratio of Year 10 students to Year 11 students in a school is 1 : 4. 80% of the Year 10 students and 85% of the Year 11 students have a part-time job. What percentage of all of these students have a part-time job?	
3 Work out $(6\sqrt{6})^2 - (4\sqrt{6})^2$	
4 Nadia changes £700 into dollars at £1 = $1.25. Nadia spends $650 and then changes the rest back into pounds at £1 = $1.5. How many pounds does Nadia get back?	
5 OAB is a triangle. OA = **a** and OB = **b**. M is on OA with OM : MA = 3 : 2. N is on AB with AN : NB = 1 : 3. (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 341 **S Tier 10-a-day**

6 A library has 2×10^3 books.
Each book has 4.9×10^3 words.
Work out the total number of words in all the books.
Give your answer in standard form.

7 The scatter graph shows temperature (x) and ice creams sold (y).
The line of best fit passes through (4, 28) and (8, 44).
(a) Find its equation in the form $y = mx + c$.
(b) Explain what its gradient tells you.



8 Solve the simultaneous equations
$x^2 + y^2 = 20$
$y = -3x - 10$

9 The area of a square is 186 cm^2, correct to the nearest cm^2.
Work out the lower bound of the side length of the square.
Give your answer correct to 3 significant figures. (Calculator)

10 Triangle ABC has AB = 9 cm and BC = 4 cm.
The area of triangle ABC is 9 cm^2.
Angle ABC is acute.
Work out the size of angle ABC.
Do not use a calculator.