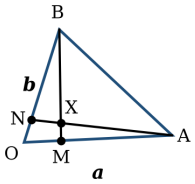
Day 323	S Tier 10-a-day
1 Write $\frac{3^{n+1} \times 9^{n+1}}{9^n}$ in the form 3^{an+c} where a and c are integers.	
2 Solve $x^2 \geq 4x + 5$	
3 The ratio of Year 10 students to Year 11 students in a school is 3 : 2. 60% of the Year 10 students and 15% of the Year 11 students have a part-time job. What percentage of all of these students have a part-time job?	
4 (a) Write 225 and 1350 as products of prime factors. (b) Find the HCF and the LCM of 225 and 1350. Give your answers as numbers.	
5 The vectors $\begin{pmatrix} 2k \\ 24 \end{pmatrix}$ and $\begin{pmatrix} 3 \\ k \end{pmatrix}$ are parallel. k is a positive number. Work out the value of k.	

Day 323	S Tier 10-a-day
6 Make x the subject of $y = 2\sqrt{x - 1} + 5$	
7 The population of a town grows by 10% each year. After 4 years the population is 33,674. Work out the population 4 years ago. (Calculator)	
8 Work out $(3.6 \times 10^5)^2$ Give your answer in standard form.	
9 OAB is a triangle. OA = **a** and OB = **b**. M is on OA with OM : MA = 1 : 3. N is on OB with ON : NB = 1 : 4. 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 The 2nd term of a geometric sequence is 36. The 5th term of the sequence is 288. (a) Work out the common ratio. (b) Work out the first term.	