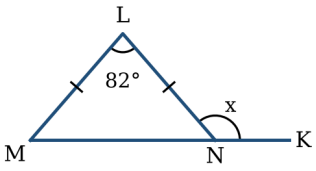
Day 102 **A Tier 10-a-day**

1 The table shows information about 77 people.
One person is chosen at random.
(a) Find the probability that the person is a girl and studies Spanish.
(b) The person studies French. Find the probability that they are a boy.

	French	Spanish	Total
Boys	14	23	37
Girls	30	10	40
Total	44	33	77

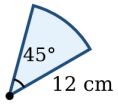
2 LMN is an isosceles triangle with LM = LN.
MNK is a straight line.
Angle MLN = 82°.
Work out the size of angle x.
The diagram is not drawn accurately.



3 Here are the times, in seconds, taken by 11 runners.
6 75 9 73 26 16 18 57 11 12 78
(a) Work out the median.
(b) Work out the interquartile range.

4 Factorise $x^2 + 12x + 35$

5 $\frac{2}{5}$ of the books in a library are fiction.
There are 36 fiction books.
Work out the total number of books in the library.

Day 102	A Tier 10-a-day
6 The diagram shows a sector of a circle of radius 12 cm. Work out the area of the sector. Give your answer in terms of π. The diagram is not drawn accurately.  	
7 Sam invests £500 in a savings account. (Calculator) The account pays compound interest at a fixed rate each year. After 2 years there is £627.20 in the account. Work out the annual rate of interest.	
8 A boat leaves a port and travels 48 miles on a bearing of 195°. (Calculator) It then travels 14 miles on a bearing of 105°. (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.	
9 Femi invests £19,000 in a savings account. (Calculator) Compound interest is paid at a fixed rate each year. After 3 years the investment is worth £32,832. Work out the annual rate of interest.	
10 $f(x) = 4x - 3$ $g(x) = x^2 - 3$ Solve $gf(x) = 13$	