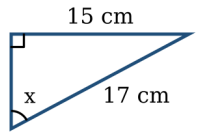
Day 272 **A Tier 10-a-day**

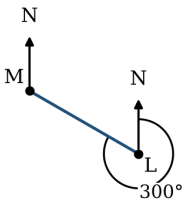
1 Here are the ingredients for 12 muffins.
Butter: 180 g
Sugar: 360 g
Water: 300 ml
(a) Work out how much butter is needed for 14 muffins.
(b) Hannah has 854 g of sugar. What is the greatest number of muffins she can make?

2 Work out the size of angle x. (Calculator)
Give your answer to 1 decimal place.
The diagram is not drawn accurately.



3 Make r the subject of $k = \frac{r - 1}{7}$

4 The bearing of M from L is 300°.
Work out the bearing of L from M.
The diagram is not drawn accurately.



5 Two fair dice are thrown.
The two scores are multiplied together.
Work out the probability that the product is less than 6.

Day 272	A Tier 10-a-day
6 A plank is 29 mm long and a pipe is 11 mm long. Each length is correct to the nearest mm. Work out the lower bound for the difference in their lengths.	
7 (a) Write $x^2 - 6x + 11$ in the form $(x + a)^2 + b$ (b) Write down the coordinates of the turning point of the curve $y = x^2 - 6x + 11$	
8 Two similar bottles have heights 3 cm and 9 cm. The smaller one has a volume of 3 cm^3. Work out the volume of the larger one.	
9 Solve $x^2 + 7x + 10 < 0$	
10 Zara invests £12,000 in a savings account. (Calculator) Compound interest is paid at a fixed rate each year. After 2 years the investment is worth £17,280. Work out the annual rate of interest.	