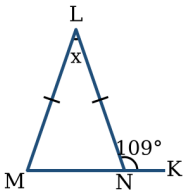
Day 16 **A Tier 10-a-day**

1 LMN is an isosceles triangle with LM = LN.
MNK is a straight line.
Angle LNK = 109°.
Work out the size of angle x.
The diagram is not drawn accurately.



2 A hall is hired for £50 plus £25 for each hour.
(a) Write a formula for the total cost, £C, after h hours.
(b) Maria pays £400 in total. Work out the number of hours.

3 (a) Write 0.000051 in standard form.
(b) Write 5.07×10^4 as an ordinary number.

4 Solve $x^2 + 9x - 3 = 0$
Give your solutions correct to 2 decimal places.
(Calculator)

5 The table shows the probabilities of the outcomes of a biased four-sided dice.
(a) Work out the value of p.
(b) The four-sided dice is rolled 100 times.
Estimate the number of times it lands on 2.

Score	1	2	3	4
Probability	0.15	p	p	0.45

Day 16	A Tier 10-a-day
6 Rationalise the denominator of $\frac{7}{\sqrt{12}}$ Give your answer in its simplest form.	
7 The mean age of 7 workers is 61 years. One of them, aged 49, leaves. Work out the mean age of the remaining workers.	
8 The point P(8, −15) lies on a circle with centre O(0, 0). (a) Work out the equation of the circle, in the form $x^2 + y^2 = r^2$. (b) Find the equation of the tangent to the circle at P.	
9 An isosceles triangle has two equal sides of length (4x + 4) cm and (3x + 12) cm. The third side is 14 cm. Work out the perimeter of the triangle.	
10 Hassan invests £7,500 in a savings account. (Calculator) Compound interest is paid at a fixed rate each year. After 2 years the investment is worth £8,112. Work out the annual rate of interest.	