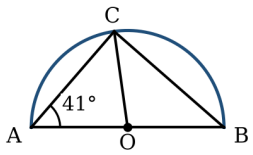
Day 167 **S Tier 10-a-day**

1 The distance to a village is 2.9 km, truncated to 1 decimal place.
Write down the error interval for the distance to a village, using d.

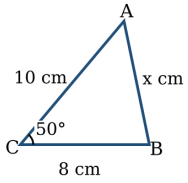
2 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 41°.
(a) Work out the size of angle ACB.
(b) Work out the size of angle COB.
The diagram is not drawn accurately.



3 Simplify fully $\frac{2^{n+3} - 2^n}{7}$

4 Solve $3^{x+3} = \frac{1}{9}$

5 The diagram shows triangle ABC. (Calculator)
(a) Work out the length of AB, marked x, to 1 decimal place.
(b) Work out the area of triangle ABC to 3 significant figures.
The diagram is not drawn accurately.



Day 167 **S Tier 10-a-day**

6 a = 0.76 and b = 0.41,
both correct to 2 decimal places.
Work out the lower bound of a ÷ b.
Give your answer correct to 3 significant figures.

7 The nth term of a sequence is $n^2 + 2n + 5$.
(a) Work out the 12th term.
(b) Is 68 a term of the sequence? You must show your working.

8 The price of a tablet is increased by 10%.
Later the new price is reduced by 30% in a sale.
The sale price is £369.60.
Work out the price before the increase.
(Calculator)

9 $f(x) = \frac{-x - 6}{2x + 1}$ where $x \neq -\frac{1}{2}$
(a) Show that ff(x) = x.
(b) Write down $f^{-1}(x)$.

10 The table gives information about the masses of some eggs.
An estimate for the mean is 44.4.
Work out the value of x.

Mass, m (g)	Frequency
$0 < m \leq 20$	20
$20 < m \leq 40$	x
$40 < m \leq 60$	9
$60 < m \leq 80$	19
$80 < m \leq 100$	9