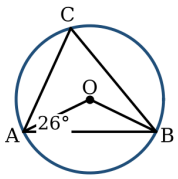
Day 157 **S Tier 10-a-day**

1 The price of a phone is decreased by 5%.
The new price is then decreased by 60%.
Work out the overall percentage change in the price.

2 The table shows the number of students in each of four groups.
(a) A stratified sample of 25 is taken. Work out how many come from Year 8.
(b) A different stratified sample has 24 from Year 7. Work out the size of this sample.

	Year 7	Year 8	Year 9	Year 10
Number	400	250	250	350

3 A, B and C are points on a circle, centre O.
Angle OAB = 26°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



4 $f(x) = 2x - 4$ and $g(x) = x^2 - 8$
(a) Find $gf(x)$. Give your answer in the form $ax^2 + bx + c$.
(b) Solve $gf(x) = 8$

5 A concrete slab in the shape of a cuboid weighs 570 N.
Its smallest face has area 150 cm^2. Its largest face has area 2,500 cm^2.
Pressure = force ÷ area
Work out (a) the greatest pressure and (b) the least pressure the concrete slab can exert on the ground, in N/m^2.

Day 157	S Tier 10-a-day

6 The line L has equation $8x - 15y = 120$.
L crosses the x-axis at the point A and the y-axis at the point B.
(a) Find the coordinates of A and B.
(b) Work out the length of AB.

7 The price of a coat is decreased by 40%.
The new price is then increased by 12%.
The final price is £940.80.
Work out the original price of the coat.

8 The graph of $y = f(x)$ has a minimum point at (4, 1).
Write down the coordinates of the turning point of the graph of
(a) $y = f(x + 2)$
(b) $y = f(-x) + 2$

9 A bag contains some counters. 7 of them are green and the rest are white.
Two counters are taken at random without replacement.

The probability that both are green is $\frac{7}{40}$.

Work out how many counters are white.

10 The diagram shows the graph of $y = a \sin bx$, where a and b are positive integers.
(a) Write down the value of a and the value of b.
(b) Work out the value of y when $x = 130°$.

