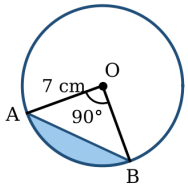
Day 37 **A Tier 10-a-day**

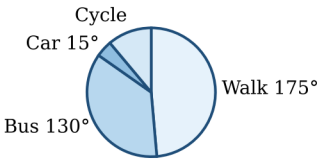
1 Solve the simultaneous equations
$5x - 4y = 15$
$-2x + 2y = -6$

2 The diagram shows a circle with centre O and radius 7 cm.
Angle AOB = 90°. (Calculator)
Work out the area of the shaded segment.
Give your answer to 3 significant figures.



3 Solve $\frac{2x - 2}{4} = \frac{3x - 1}{5}$

4 The pie chart shows how some students travel to school.
35 students chose walk.
(a) Work out the angle for cycle.
(b) How many students chose cycle?

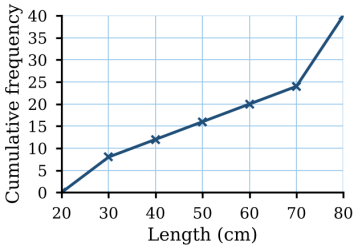


5 No tax is paid on the first £11,000 of income.
Tax of 15% is paid on the next £35,000. Tax of 35% is paid on all income above £46,000.
(Calculator)
Jack earns £69,000 a year.
Work out the income tax paid.

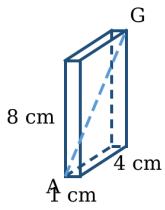
Day 37 **A Tier 10-a-day**

6 $f(x) = 3x - 5$
$g(x) = x^2 - 3$
Solve $fg(x) = 94$

7 The cumulative frequency graph shows information about the length of 40 leaves.
Use the graph to find an estimate for
(a) the median,
(b) the number of leaves with a length greater than 30 cm.



8 The diagram shows a cuboid.
Work out the length of the diagonal AG.
The diagram is not drawn accurately.



9 A cyclist travels 440 metres in 15.2 seconds.
The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second.
(a) Work out the upper bound and the lower bound of the speed in m/s.
(b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.

10 Ship A sails 6 km from a port on a bearing of 260°.
Ship B sails 11 km from the same port on a bearing of 145°. (Calculator)
Work out the distance between the two ships.
Give your answer to 3 significant figures.