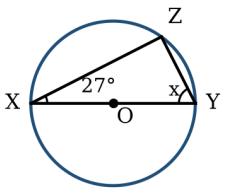
Day 189 **A Tier 10-a-day**

1 The area of a circle is 144π cm^2.
(a) Work out the radius of the circle.
(b) Work out the circumference. Give your answer in terms of π.

2 A mechanic charges £55 plus £45 for each hour of work.
(a) Write a formula for the total cost, £C, after t hours.
(b) Aisha pays £595 in total. Work out the number of hours.

3 XY is a diameter of the circle.
Angle YXZ = 27°.
Work out the size of angle x.
Give a reason for each step of your working.



4 The table shows the probabilities of the outcomes of a biased spinner.
(a) Work out the value of p.
(b) The spinner is spun 200 times. Estimate the number of times it lands on blue.

Colour	Red	Blue	Green	Yellow
Probability	0.25	p	p	0.05

5 Triangle PQR has vertices P(4, 1), Q(4, 3), R(6, −1).
The triangle is enlarged with scale factor $-\frac{1}{2}$ and centre (2, −1).
Write down the coordinates of the vertices of the image.

Day 189 **A Tier 10-a-day**

6 Work out $(1\frac{3}{4} + 3\frac{1}{6}) \times 1\frac{1}{3}$

Give your answer as a mixed number in its simplest form.

7 Expand and simplify

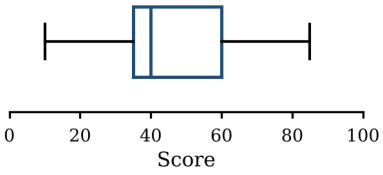
$(x + 1)(x - 3)(x + 2)$

8 The box plot shows the scores of the students in Class A in a test.

(a) Write down the median and the interquartile range.

For Class B the median is 35 and the interquartile range is 35.

(b) Compare the distributions of the two classes.



9 A is the point $(-5, -4)$ and B is the point $(1, 0)$. Find the equation of the perpendicular bisector of AB.

10 A runner travels 400 m in 13.1 s. The distance is measured to the nearest 10 metres and the time to the nearest 0.1 second. (Calculator)

Work out the lower bound for the runner's speed in m/s.

Give your answer correct to 3 significant figures.