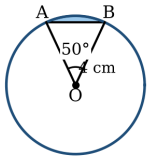
Day 263 **S Tier 10-a-day**

1 The circle has centre O and radius 4 cm. A and B are points on the circle and angle AOB = 50°.
(Calculator)
Work out the area of the shaded segment. Give your answer correct to 3 significant figures.
The diagram is not drawn accurately.



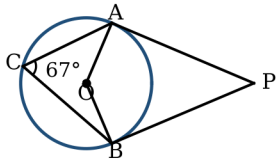
2 Simplify fully $\frac{2xy^5 \times 4xy}{2x^4y^5}$

Give your answer in the form kx^ay^b

3 Simplify fully $4\sqrt{45} \times 4\sqrt{7}$

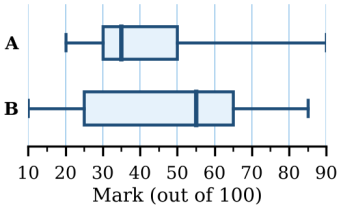
4 The ratio of men to women in a school is 3 : 1.
65% of the men and 15% of the women own a car.
What percentage of all of these students own a car?

5 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle ACB = 67°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle APB.
The diagram is not drawn accurately.



Day 263 **S Tier 10-a-day**

6 The box plots show the test marks of the students in two classes, A and B.
(a) Work out the interquartile range for each.
(b) Compare the distributions of A and B.



7 The nth term of a sequence is $n^2 - n - 8$.
(a) Work out the 11th term.
(b) Is 201 a term of the sequence? You must show your working.

8 Simplify $\frac{1}{3+\sqrt{7}} - \frac{1}{3-\sqrt{7}}$
Give your answer with a rational denominator.

9 Simplify fully $\frac{x^2 - 3x - 18}{x - 2} \div \frac{x + 3}{x^2 - 3x + 2}$

10 The area of a square is 333 cm^2, correct to the nearest cm^2.
Work out the lower bound of the side length of the square.
Give your answer correct to 3 significant figures. (Calculator)