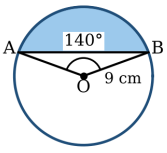
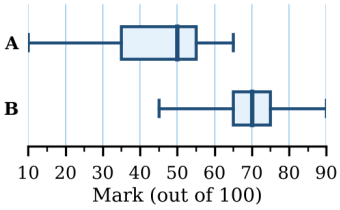
| Day 288 | IGCSE 10-a-day |
|---|---|
| **1** $f(x) = \frac{x+5}{4}$ and $g(x) = x^2 + 3x - 17$.<br>Solve $f^{-1}(x) = g(x)$. | |
| **2** Zip Taxis has a fixed charge of £1.50 plus £5 per mile.<br>Go Cabs has a fixed charge of £37.50 plus £2 per mile.<br>(a) Work out the number of miles for which the two costs are the same.<br>(b) Which is cheaper for 15 miles, and by how much? | |
| **3** Work out $(2 \times 10^{-3}) \times (1.2 \times 10^{-1})$.<br>Give your answer in standard form. | |
| **4** $f(x) = 2x + \frac{18}{x}$ for $x > 0$<br>(a) Find the range of values of x for which f is a decreasing function.<br>(b) Write down the least value of f(x). | |
| **5** The circle has centre O and radius 9 cm. A and B are points on the circle and angle AOB = 140°. (Calculator)<br>Work out the area of the shaded segment. Give your answer correct to 3 significant figures.<br>The diagram is not drawn accurately.<br> | |

**Day 288** **IGCSE 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** A curve has equation $y = ax^2 + \frac{b}{x}$, where a and b are constants.
The point (1, 4) lies on the curve and the gradient of the curve at this point is $-1$.
Find the values of a and b.

**8** Write $\frac{8^n \times 4^{n-2}}{2^n}$ in the form $2^{an+c}$
where a and c are integers.

**9** P is the point $(a, \frac{7}{2}a^2)$ on the curve $y = \frac{7}{2}x^2$, where $a \neq 0$.
The normal to the curve at P meets the y-axis at the point Q.
Show that the y coordinate of Q is $\frac{7}{2}a^2 + \frac{1}{7}$.

**10** Solve $\frac{5}{x+1} + \frac{2}{x-2} = \frac{1}{2}$