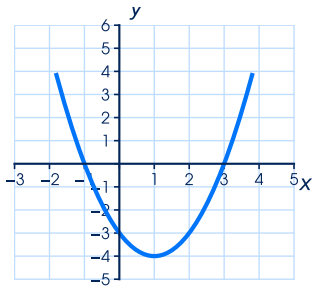
GCSE HIGHER · REVISION MAT 4

Recognising and sketching graphs

1 Complete the table for $y = \frac{12}{x}$.

x	1	2	3	4	6
y					

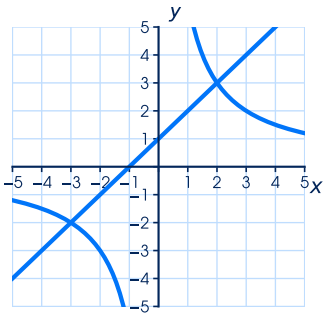
2 Write down the coordinates of the turning point.



3 Joe says the graph of $y = x^2 + 4$ crosses the x-axis twice.

Explain why Joe is wrong.

4 The graphs of $y = \frac{6}{x}$ and $y = x + 1$ are shown.



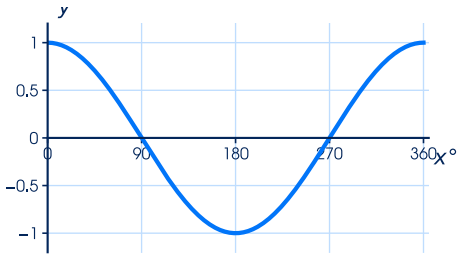
Find the points of intersection.

5 A cubic graph crosses the x-axis at -2, 0 and 2.

Show that its equation could be $y = x^3 - 4x$.

6 Use the graph of $y = \cos x$ to solve

$\cos x = -0.5$ for $0° \leq x \leq 360°$



7 Complete the table for $y = 2^{-x}$.

x	−2	−1	0	1	2
y					

Describe what happens to y as x increases.

8 The graph of $y = k \sin x$ passes through (30, 4).

Find k and the maximum value of y.

ANSWERS · REVISION MAT 4

Recognising and sketching graphs

1 **y: 12, 6, 4, 3, 2**

2 **(1, –4)**

3 $x^2 \geq 0$, so $y \geq 4$.

The graph never reaches $y = 0$.

4 $\frac{6}{x} = x + 1$

$x^2 + x - 6 = 0 \Rightarrow x = 2$ or -3

(2, 3) and (–3, –2)

5 $y = x(x - 2)(x + 2)$

$= x(x^2 - 4)$

$= x^3 - 4x$

6 $\cos 60° = 0.5$

$x = 120°$ and $240°$

7 **y: 4, 2, 1, 0.5, 0.25**

y halves each time, getting closer to 0.

8 $4 = k \times 0.5$

$k = 8$, maximum $y = 8$

Mr&Mrs MATHS