GCSE HIGHER · REVISION MAT 1

Transforming graphs

1 $y = f(x)$ has a turning point at $(2, -3)$.

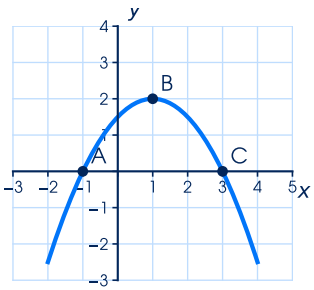
Write down the turning point of $y = f(x) + 4$.

2 $y = f(x)$ has a turning point at $(2, -3)$.

Write down the turning point of $y = f(x - 1)$.

3 Describe the transformation that maps $y = x^2$ onto $y = x^2 - 5$.

4 The graph of $y = f(x)$ is shown.



Write down the image of B on $y = -f(x)$.

5 Show that $y = (x - 3)^2$ is a translation of $y = x^2$.

State the vector.

6 $y = \sin x$ is translated to $y = \sin(x + 90°)$.

Which common graph is this the same as?

7 $y = f(x)$ has a maximum at $(-2, 5)$.

Write down the maximum of $y = f(-x)$.

8 $y = x^2 + 4x + 1$ is translated by the vector $(3, -2)$.

Find the new equation in the form $y = x^2 + bx + c$.

ANSWERS · REVISION MAT 1

Transforming graphs

1 **(2, 1)**

2 **(3, –3)**

3 **Translation by vector (0, –5)**

4 **(1, –2)**

5 x is replaced by $x - 3$: shift right 3.

Vector (3, 0)

6 Shifted 90° to the left

$y = \cos x$

7 Reflection in the y-axis

(2, 5)

8 $y = (x - 3)^2 + 4(x - 3) + 1 - 2$

$= x^2 - 6x + 9 + 4x - 12 - 1$

$y = x^2 - 2x - 4$