GCSE HIGHER · REVISION MAT 3

Transforming graphs

1 $y = f(x)$ has a turning point at $(-1, 4)$.

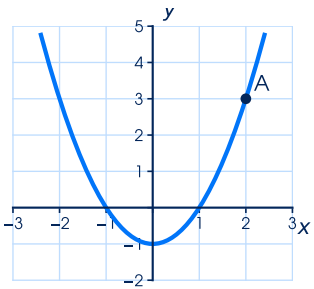
Write down the turning point of $y = f(x) - 6$.

2 $y = f(x)$ has a turning point at $(-1, 4)$.

Write down the turning point of $y = f(x + 2)$.

3 Describe the single transformation that maps $y = f(x)$ onto $y = f(x - 5)$.

4 A(2, 3) lies on $y = f(x)$.



Write down the image of A on

(a) $y = -f(x)$

(b) $y = f(-x)$

5 Lisa says $y = (x + 2)^2$ is $y = x^2$ moved 2 to the right.

Is Lisa correct?

6 $y = \sin x$ has a maximum at $(90°, 1)$.

Write down the maximum of $y = \sin(x - 30°) + 2$ for $0° \leq x \leq 360°$.

7 Show that translating $y = x^2$ by $(-1, 3)$ gives

$$y = x^2 + 2x + 4$$

8 $y = x^2$ is translated by $(2, -5)$.

Find where the new graph crosses the x-axis.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Transforming graphs

1 (–1, –2)

2 (–3, 4)

3 Translation by vector (5, 0)

4 (a) (2, –3)

(b) (–2, 3)

5 No: $x + 2$ moves the graph 2 to the left.

6 Right 30°, up 2

(120°, 3)

7 $y = (x + 1)^2 + 3$

$= x^2 + 2x + 4$

8 $(x - 2)^2 - 5 = 0$

$x = 2 \pm \sqrt{5}$

Mr&Mrs MATHS