

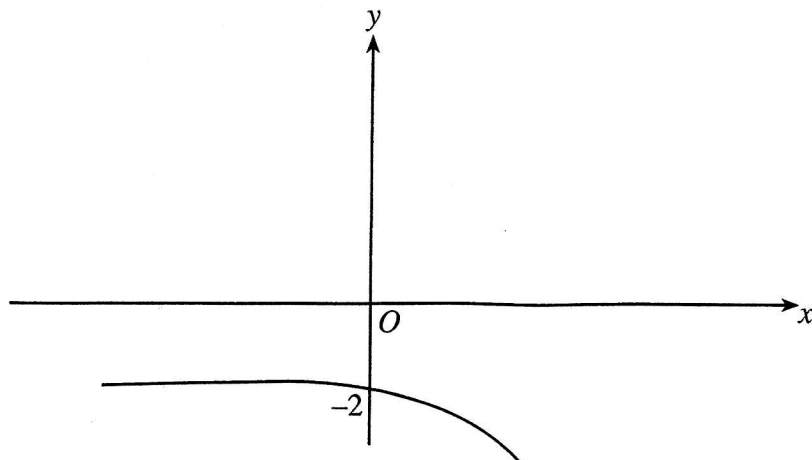
TRANSFORMATION OF GRAPHS

①

The diagram shows a sketch of $y = f(x)$.

On the same diagram, sketch the curve $y = f(x) + 3$.

Mark clearly the coordinates of the point where the curve crosses the y -axis.

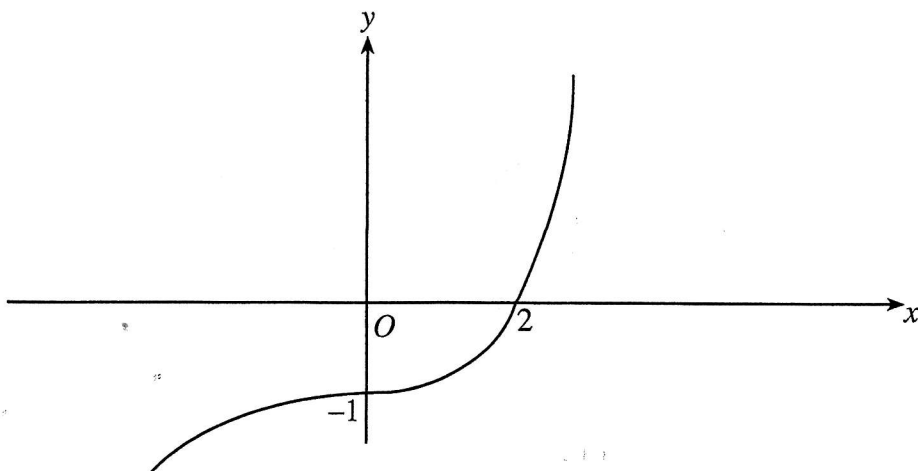


[2]

(b) The diagram shows a sketch of $y = g(x)$.

On the same diagram, sketch the curve $y = g(x - 3)$.

Mark clearly the coordinates of the point where the curve crosses the x -axis.



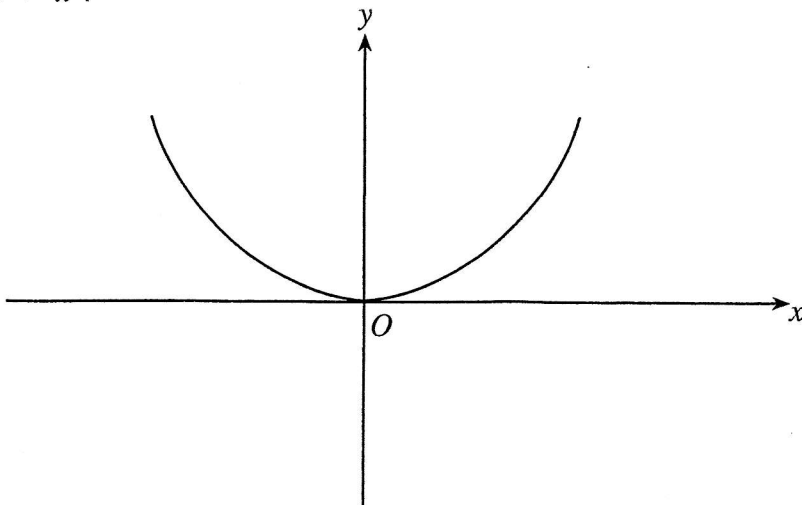
[2]

(c) The diagram shows the sketch of $y = x^2$.

On the same diagram, sketch the curves.

(i) $y = 4x^2$,

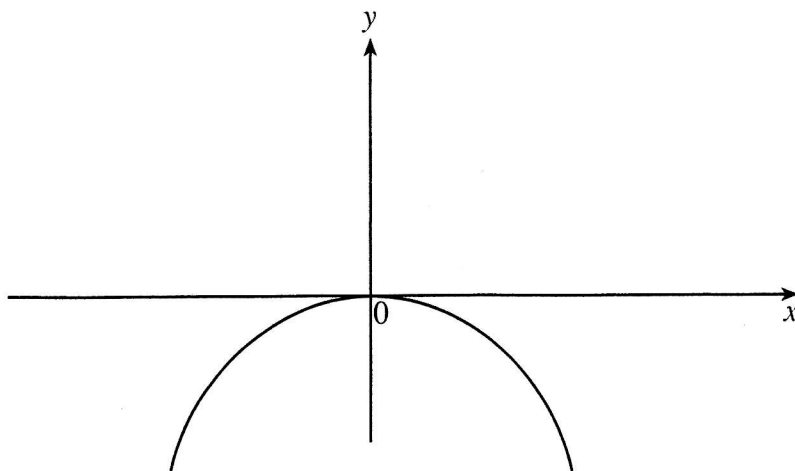
(ii) $y = -x^2$.



[2]

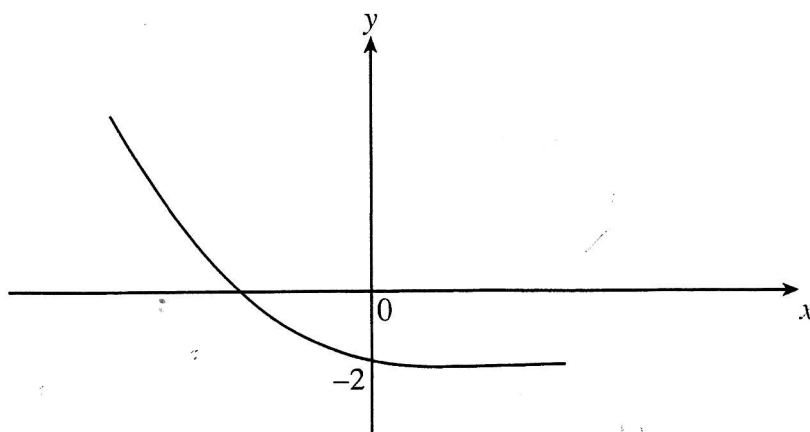
2

- (a) The diagram shows a sketch of $y = f(x)$.
On the same diagram, sketch the curve $y = f(x + 6)$.
Mark clearly the coordinates of the point where the curve touches the x -axis.



[2]

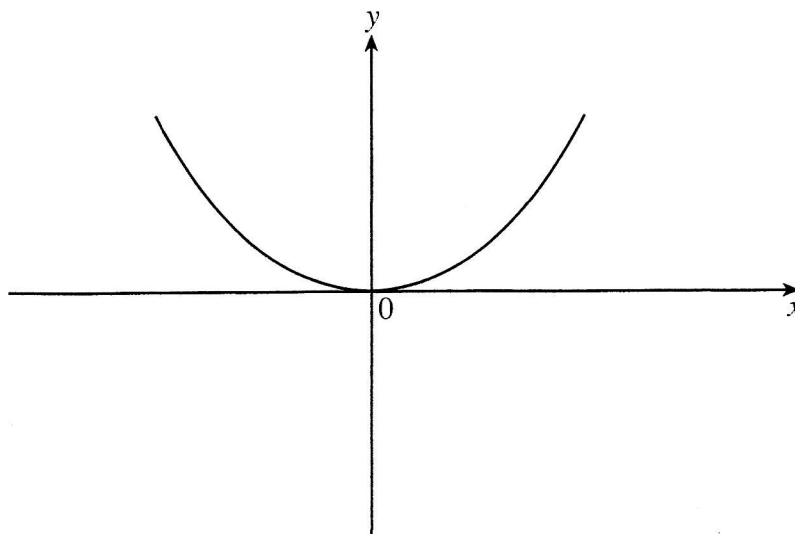
- (b) The diagram shows a sketch of $y = g(x)$.
On the same diagram, sketch the curve $y = g(x) + 6$.
Mark clearly the coordinates of the point where the curve crosses the y -axis.



[2]

- (c) The diagram shows the sketch of $y = x^2$.
On the same diagram, sketch the curves

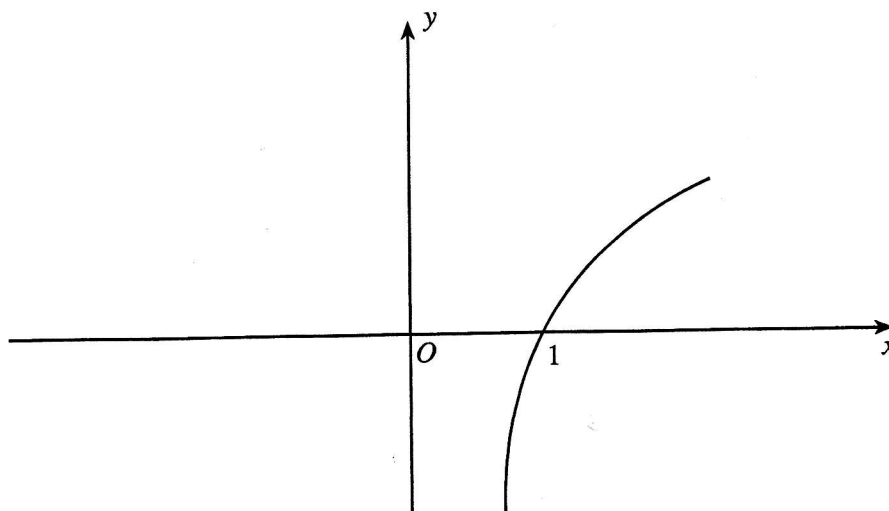
- (i) $y = -2x^2$,
(ii) $y = 3 - 2x^2$.



[3]

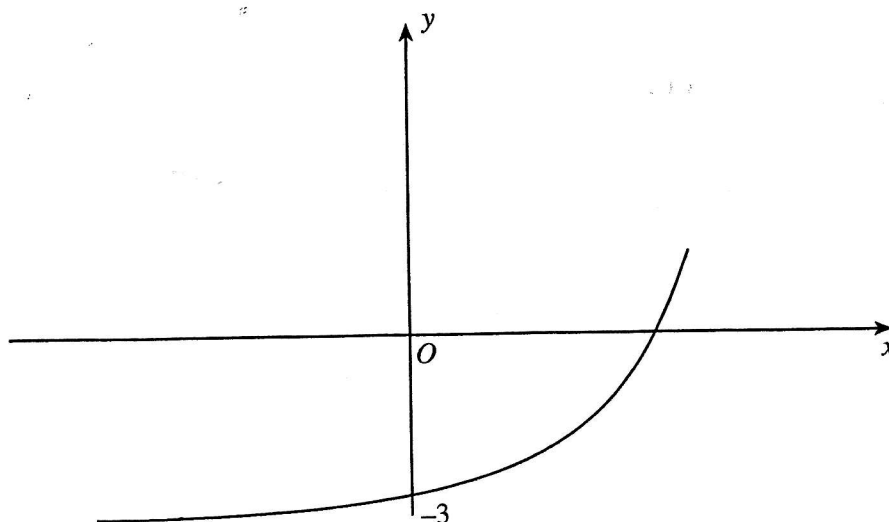
3

- (a) The diagram shows a sketch of $y = f(x)$.
On the same diagram, sketch the curve $y = f(x + 3)$.
Mark clearly the coordinates of the point where the curve crosses the x -axis.



[2]

- (b) The diagram shows a sketch of $y = g(x)$.
On the same diagram, sketch the curve $y = g(x) + 2$.
Mark clearly the coordinates of the point where the curve crosses the y -axis.



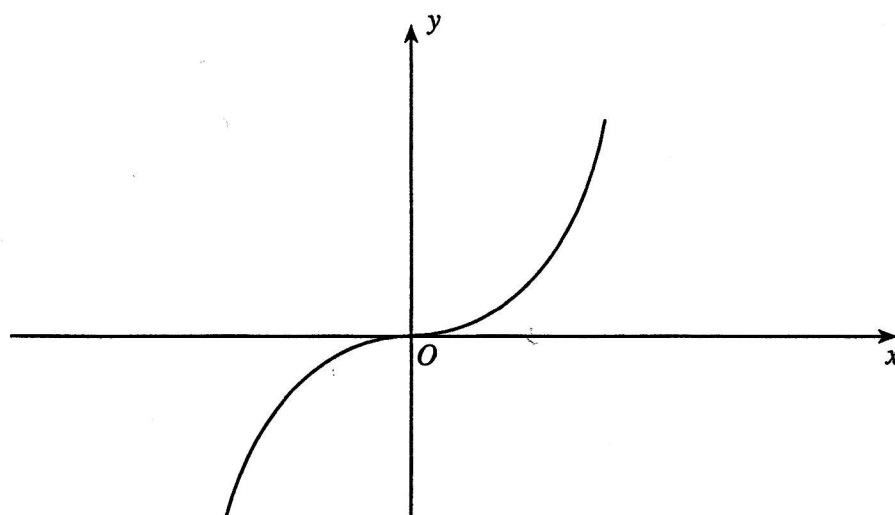
[2]

(c) The diagram shows a sketch of $y = x^3$.

On the same diagram, sketch the curves

(i) $y = -x^3$,

(ii) $y = -x^3 + 4$.



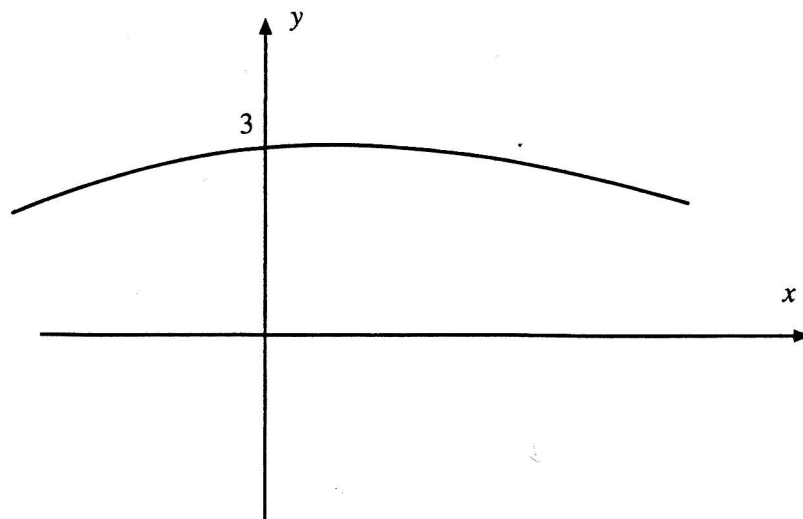
[2]

4

(a)

The diagram shows a sketch of $y = f(x)$.

On the same diagram, sketch the curve $y = f(x) - 2$. Mark clearly the coordinates of the point where the curve crosses the y-axis.

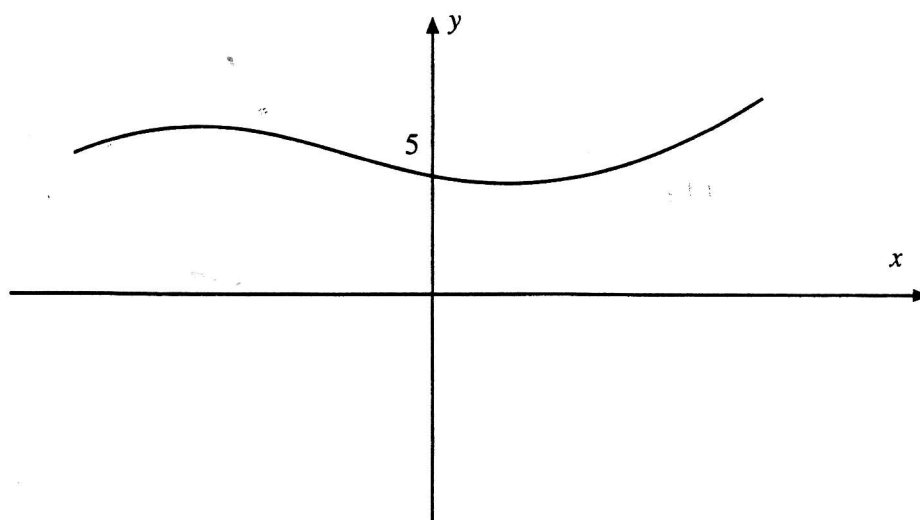


[2]

(b)

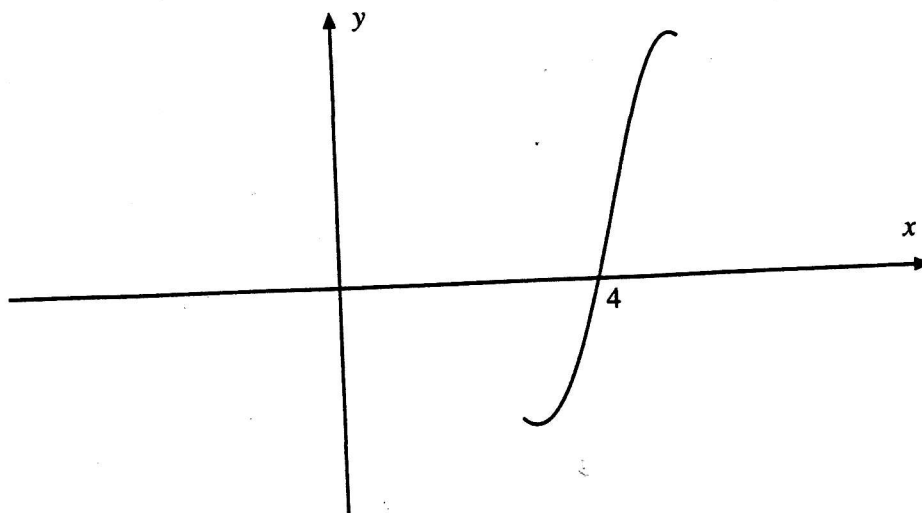
The diagram shows the sketch of $y = g(x)$.

On the same diagram sketch the curve $y = -g(x)$. Mark clearly the coordinates of the point where the curve crosses the y-axis.



[2]

- (c) The diagram shows the sketch of $y = h(x)$.
On the same diagram sketch the curve $y = h(x-3)$. Mark clearly the coordinates of the point where the curve crosses the x -axis.



[2]