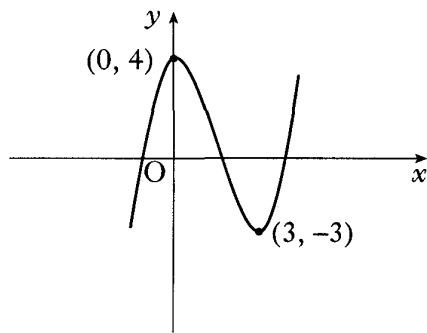
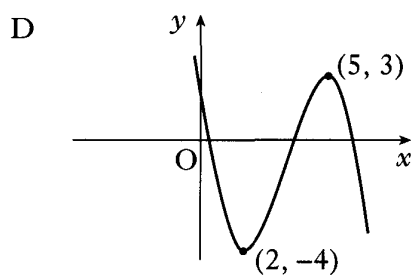
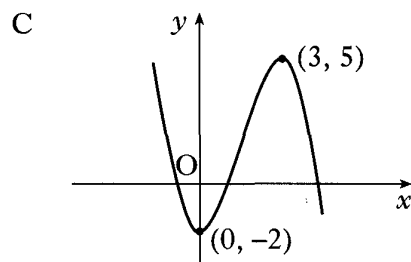
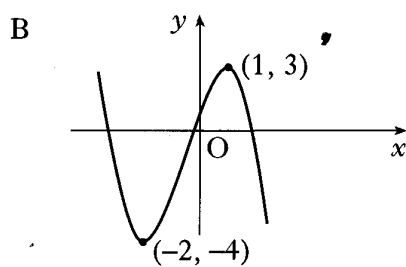
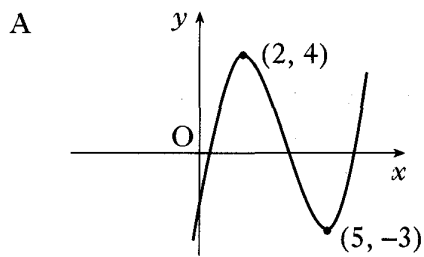


8. The diagram shows part of the graph of a function with equation $y = f(x)$.



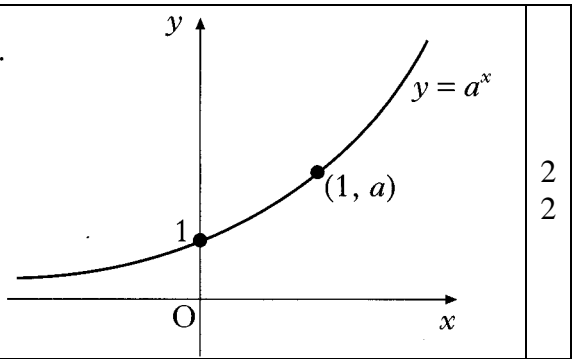
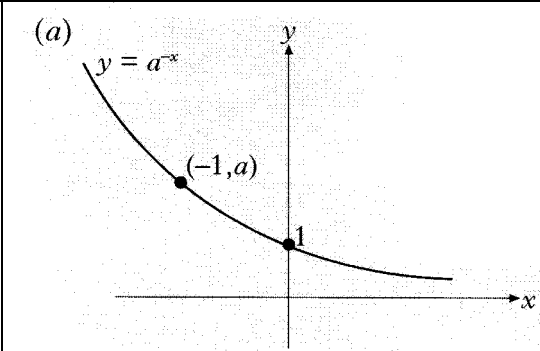

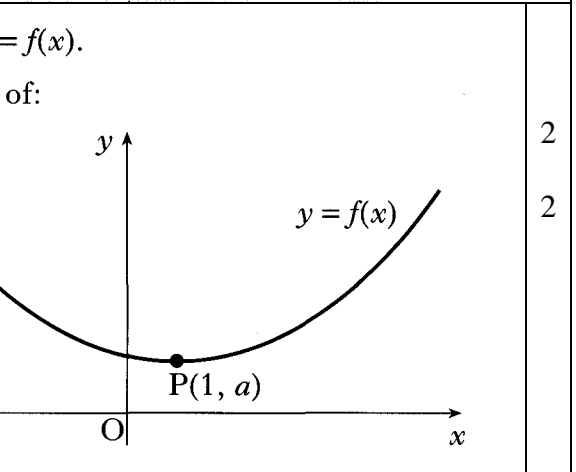
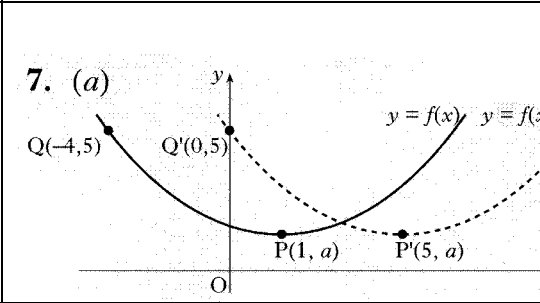
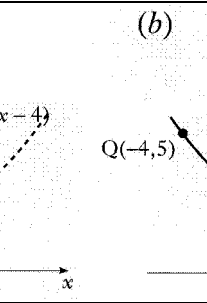
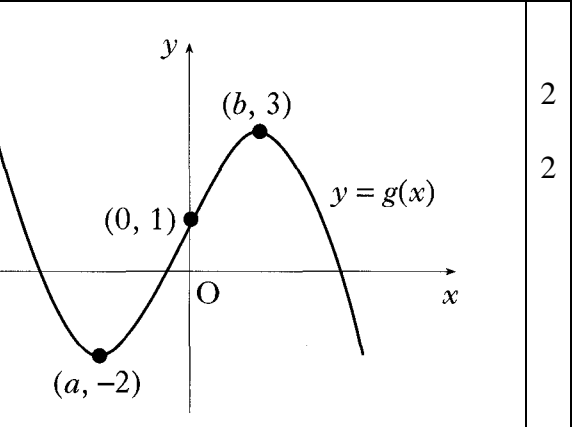
Which of the following diagrams shows the graph with equation $y = -f(x - 2)$?



2008 P1

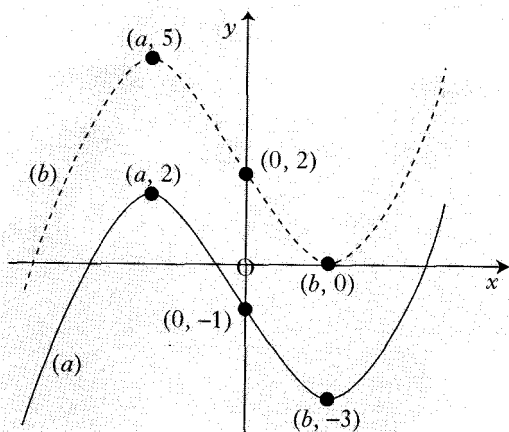
2

Ans D

2007 P2	<p>9. The diagram shows the graph of $y = a^x$, $a > 1$.</p> <p>On separate diagrams, sketch the graphs of:</p> <p>(a) $y = a^{-x}$;</p> <p>(b) $y = a^{1-x}$.</p>		2 2
Ans	<p>(a) </p> <p>(b) </p>		2 2
2006 P2	<p>7. The diagram shows the graph of a function $y = f(x)$.</p> <p>Copy the diagram and on it sketch the graphs of:</p> <p>(a) $y = f(x - 4)$;</p> <p>(b) $y = 2 + f(x - 4)$.</p>		2 2
Ans	<p>7. (a) </p> <p>(b) </p>		2 2
2004 P1	<p>4. The diagram shows the graph of $y = g(x)$.</p> <p>(a) Sketch the graph of $y = -g(x)$.</p> <p>(b) On the same diagram, sketch the graph of $y = 3 - g(x)$.</p>		2 2

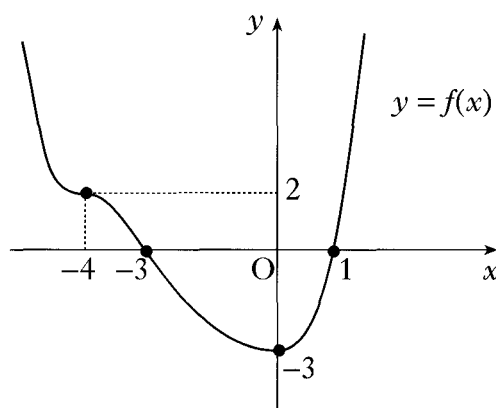
- (a) Reflect in x -axis.
 (b) Translate +3 parallel to y -axis

Ans



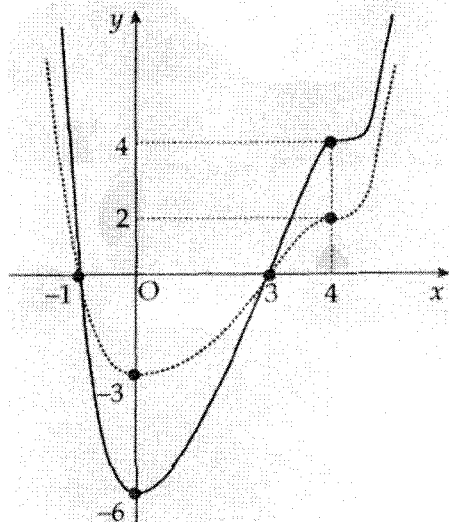
5. The diagram shows the graph of a function f .
 f has a minimum turning point at $(0, -3)$ and a point of inflexion at $(-4, 2)$.
 (a) Sketch the graph of $y = f(-x)$.
 (b) On the same diagram, sketch the graph of $y = 2f(-x)$.

2003 P2



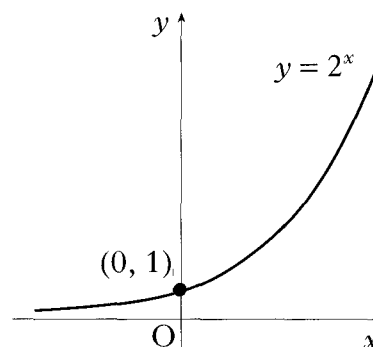
2
2

Ans



8. The diagram shows part of the graph of $y = 2^x$.
 (a) Sketch the graph of $y = 2^{-x} - 8$.
 (b) Find the coordinates of the points where it crosses the x and y axes.

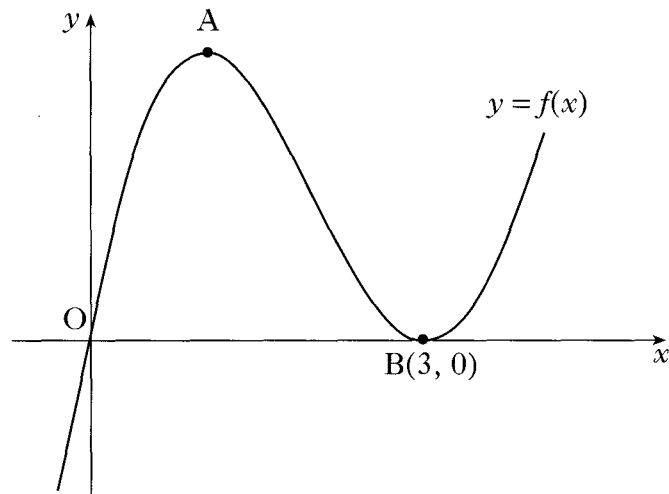
2002W P1



2
2

Ans	<p>(a) & (b)</p> <p>Reflect graph in y-axis followed by a translation $\begin{pmatrix} 0 \\ -8 \end{pmatrix}$</p>		
2002 P1	<p>7. (a) Express $f(x) = x^2 - 4x + 5$ in the form $f(x) = (x - a)^2 + b$.</p> <p>(b) On the same diagram sketch:</p> <p>(i) the graph of $y = f(x)$;</p> <p>(ii) the graph of $y = 10 - f(x)$.</p> <p>(c) Find the range of values of x for which $10 - f(x)$ is positive.</p>	<p>2</p> <p>4</p> <p>1</p>	
Ans	<p>(a) $x = 7$</p> <p>(b) $3x + 2y = 23$</p> <p>(c) $(7, 1)$</p>		
2001 P1	<p>10. The diagram shows a sketch of part of the graph of $y = \log_2(x)$.</p> <p>(a) State the values of a and b.</p> <p>(b) Sketch the graph of $y = \log_2(x + 1) - 3$.</p>		<p>1</p> <p>3</p>
Ans	<p>(a) $a = 1, b = 3$</p>		

2. A sketch of the graph of $y = f(x)$ where $f(x) = x^3 - 6x^2 + 9x$ is shown below. The graph has a maximum at A and a minimum at B(3, 0).



- (a) Find the coordinates of the turning point at A.
- (b) Hence sketch the graph of $y = g(x)$ where $g(x) = f(x + 2) + 4$. Indicate the coordinates of the turning points. There is no need to calculate the coordinates of the points of intersection with the axes.
- (c) Write down the range of values of k for which $g(x) = k$ has 3 real roots.

4
2
1

Ans

- (a) $A = (1, 4)$
- (b) $f(x)$ needs to be translated
4 units up, 2 units left
Sketch with A' at $(-1, 8)$ and
 B' at $(1, 4)$
- (c) $4 < k < 8$

5. Part of the graph of $y = f(x)$ is shown in the diagram. On separate diagrams, sketch the graphs of

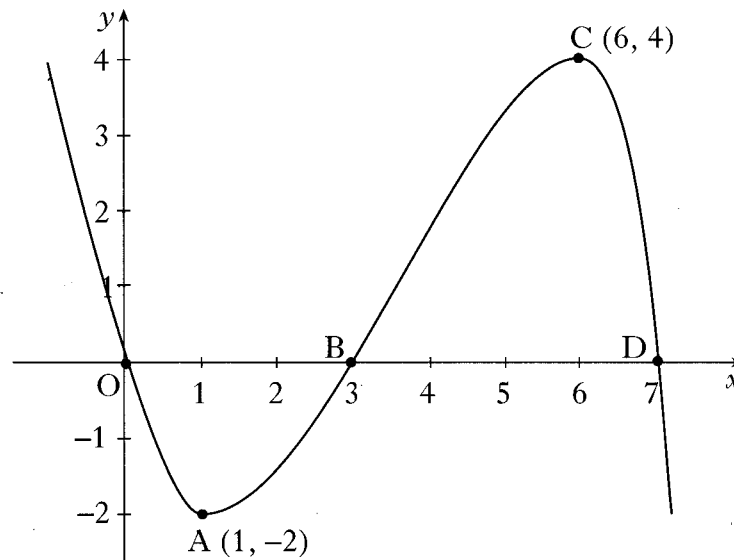
(i) $y = f(x + 1)$

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

Indicate on each graph the images of O, A, B, C and D.

5

Specimen 2 P2



Ans

