Edexcel AS Mathematics Graphs and transformations

Section 2: Transformations of graphs

Section test

1. The graph of y = f(x) is shown below.



The graph below is a transformation of the graph of y = f(x).



The equation of this graph is given by
(a)
$$y = f(x) + 1$$
 (b) $y = f(x + 1)$
(c) $y = f(x) - 1$ (d) $y = f(x - 1)$

The graph below is a transformation of the graph of y = f(x).



The equation of this graph is given by (a) y = f(x) - 1 (b) y = f(x - 1)(c) y = f(x + 1) (d) y = f(x) + 1



Edexcel AS Graphs 2 section test

The graph below is a transformation of the graph of y = f(x).



The equation of the graph is

(a) $y = \frac{1}{2} f(x)$ (b) y = 2f(x)(c) $y = f(\frac{1}{2}x)$ (d) y = f(2x)

The graph below is a transformation of the graph of y = f(x).



The equation of the graph is (a) $y = f(\frac{1}{2}x)$ (b) y = f(2x)(c) y = 2f(x) (d) $y = \frac{1}{2}f(x)$

Questions 2 to 6 are about transformations of the graph of a function g(x). The graph y = g(x) passes through the *x*-axis at (-2, 0), the *y*-axis at (0, -1) and has a local minimum point at (1, -2).

- 2. What are the coordinates of the minimum point of the graph of y = g(x 4)?
- 3. What are the coordinates of the minimum point of the graph of y = g(x) 3?
- 4. At what points does the graph of y = g(4x) cross the coordinate axes?
- 5. At what points does the graph of y = 3g(x) cross the coordinate axes?
- 6. What are the coordinates of the minimum point of the graph of y = g(x 3) + 1?



8. What is the equation of this curve?



9. Which of the following equations

(i)
$$y = \sin(x+90^\circ)$$
(ii) $y = \sin(x-90^\circ)$ (iii) $y = \cos(x+180^\circ)$ (iv) $y = \cos(x+90^\circ)$ (v) $y = -\cos x$ (vi) $y = \cos(-x)$

correctly describes the curve below? Choose as many as apply.



- 10. The graph of $y = \cos \frac{1}{2}x$ is obtained from the graph of $y = \cos x$ by:
- (a) a one-way stretch, parallel to the x axis, scale factor $\frac{1}{2}$
- (b) a one-way stretch, parallel to the x axis, scale factor 2
- (c) a one-way stretch, parallel to the y axis, scale factor 2
- (d) a one-way stretch, parallel to the y axis, scale factor $\frac{1}{2}$