JRA Tutors
Private tuition and small online Study Pods

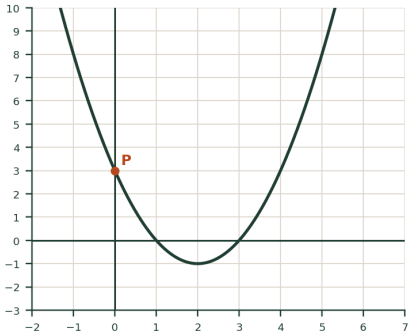
Transforming Graphs y = f(x)

Grade 8/9 topic · Higher tier · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Questions 1–15 (60 marks) build up to the harder Grade 8–9 style questions at the end; aim to complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 80 marks.

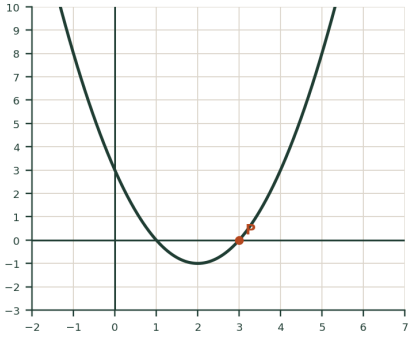
Warm-up

1 The graph of y = f(x) is shown. The point P(0, 3) lies on the graph. Write down the coordinates of the image of P on y = f(x) + 3. **[3 marks]**



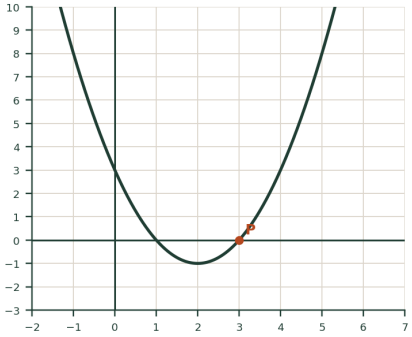
Answer _____

2 The graph of y = f(x) is shown. The point P(3, 0) lies on the graph. Write down the image of P on y = f(x) − 4. **[3 marks]**



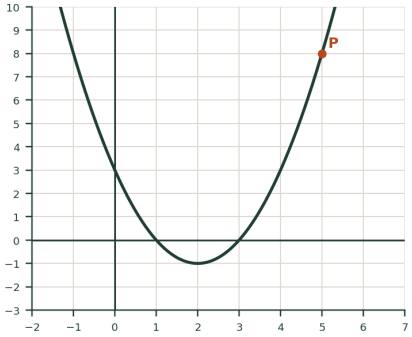
Answer _____

3 The graph of y = f(x) is shown. The point P(3, 0) lies on the graph. Write down the image of P on y = f(x + 3). **[3 marks]**



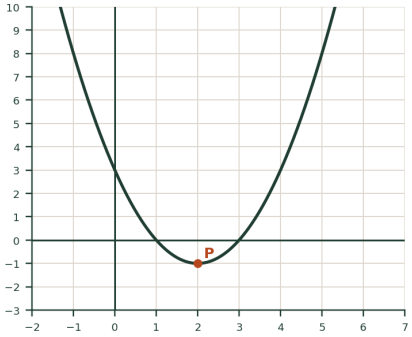
Answer _____

4 The graph of y = f(x) is shown. The point P(5, 8) lies on the graph. Write down the image of P on y = f(x − 3). **[3 marks]**



Answer _____

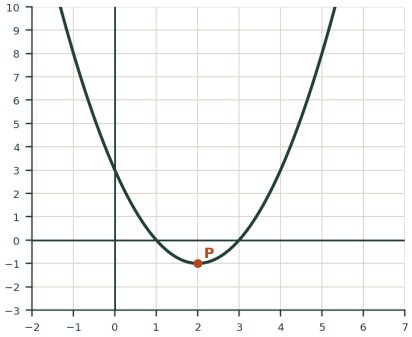
5 The graph of y = f(x) is shown. The point P(2, −1) lies on the graph. Write down the image of P on y = −f(x). **[3 marks]**



Answer _____

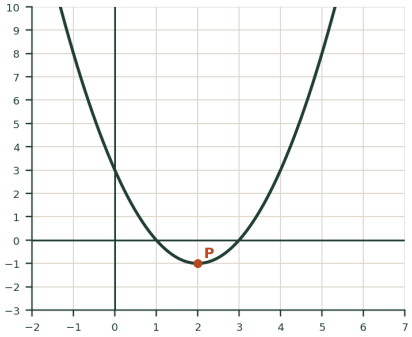
Core

6 The graph of y = f(x) is shown. The point P(2, −1) lies on the graph. Write down the image of P on y = f(−x). **[4 marks]**



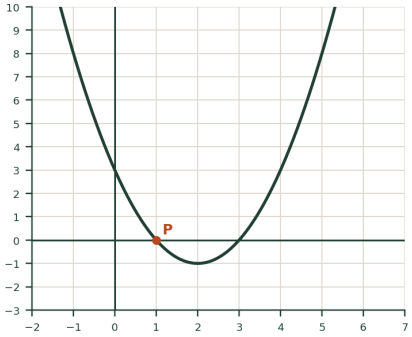
Answer _____

7 The graph of y = f(x) is shown. The point P(2, −1) lies on the graph. Write down the image of P on y = 2f(x). **[4 marks]**



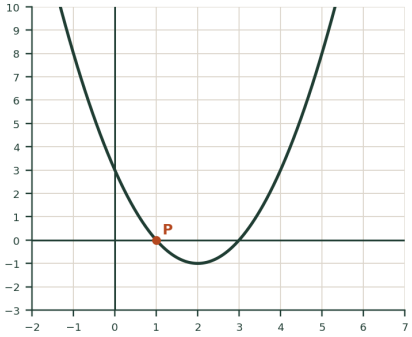
Answer _____

8 The graph of y = f(x) is shown. The point P(1, 0) lies on the graph. Write down the image of P on y = f(2x). **[4 marks]**



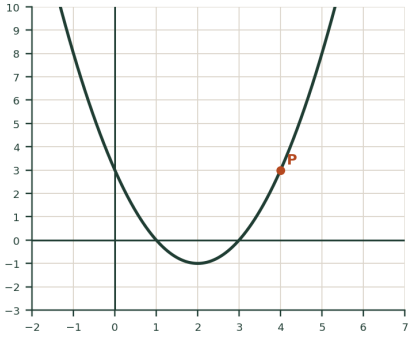
Answer _____

9 The graph of y = f(x) is shown. The point P(1, 0) lies on the graph. Write down the image of P on y = f(x/2). **[4 marks]**



Answer _____

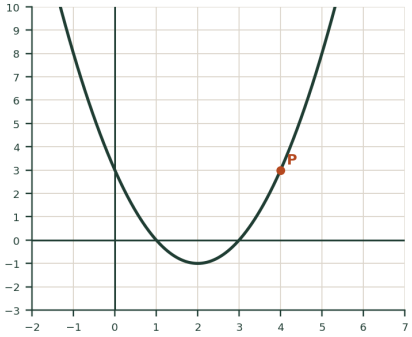
10 The graph of y = f(x) is shown. The point P(4, 3) lies on the graph. Write down the image of P on y = ½f(x). **[4 marks]**



Answer _____

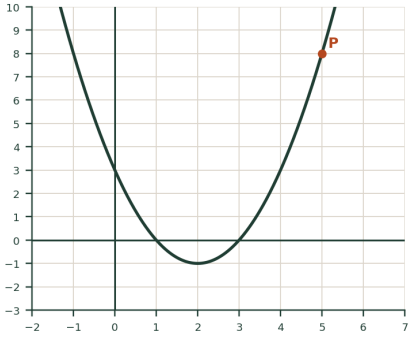
Stretch

11 The graph of y = f(x) is shown. The point P(4, 3) lies on the graph. Write down the image of P on y = 2f(x) + 3. **[5 marks]**



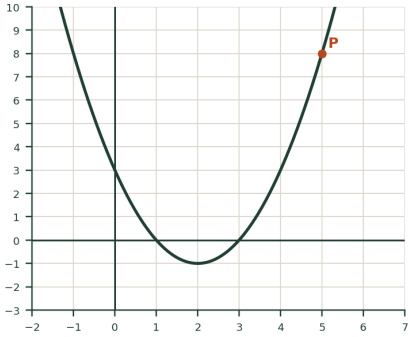
Answer _____

12 The graph of y = f(x) is shown. The point P(5, 8) lies on the graph. Write down the image of P on y = f(x + 2) − 2. **[5 marks]**



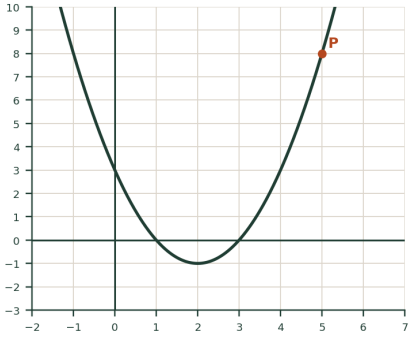
Answer _____

13 The graph of y = f(x) is shown. The point P(5, 8) lies on the graph. Write down the image of P on y = −f(x − 3). **[5 marks]**



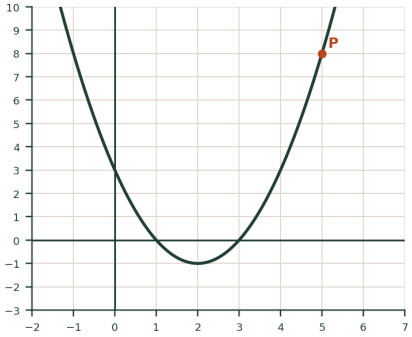
Answer _____

14 The graph of y = f(x) is shown. The point P(5, 8) lies on the graph. Write down the image of P on y = f(2x) + 3. **[5 marks]**



Answer _____

15 The graph of y = f(x) is shown. The point P(5, 8) lies on the graph. Write down the image of P on y = f(−x) + 2. **[5 marks]**



Answer _____

Challenge

16 y = f(x) has a minimum at (2, −1). Write down the minimum point of y = f(x + 3). **[4 marks]**

Answer _____

17 y = f(x) has a minimum at (2, −1). Write down the coordinates of the turning point of y = f(x) + 5. **[3 marks]**

Answer _____

18 y = f(x) has a maximum at (3, 4). Write down the turning point of y = −f(x). **[4 marks]**

Answer _____

19 The graph of y = f(x) crosses the x-axis at x = 1 and x = 3. Write down where y = f(2x) crosses the x-axis. **[5 marks]**

Answer _____

20 The graph of $y = x^2$ is transformed into $y = (x - 3)^2 + 2$. Describe the transformation fully. **[4 marks]**

Answer _____