EQUATION OF A LINE

Pearson Edexcel – Tuesday 19 May 2020 - Paper 1 (Non-Calculator) Higher Tier

1.

15 The straight line L_1 has equation $y = 3x - 4$
The straight line L_2 is perpendicular to L_1 and passes through the point (9, 5)

Find an equation of line L_2

....

(Total for Question 15 is 3 marks)

Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Higher Tier

2.

16 The straight line **L** has the equation $3y = 4x + 7$
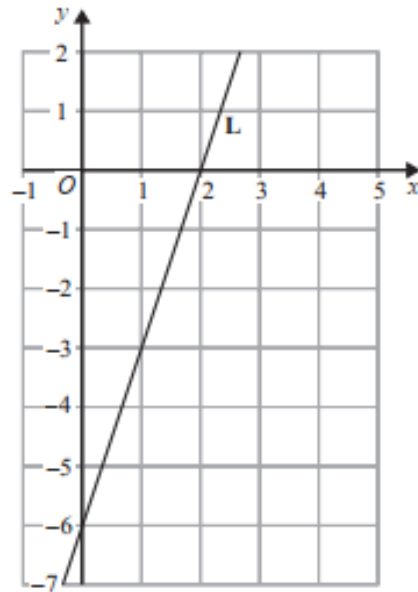The point *A* has coordinates $(3, -5)$

Find an equation of the straight line that is perpendicular to **L** and passes through *A*.

....

(Total for Question 16 is 3 marks)

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier
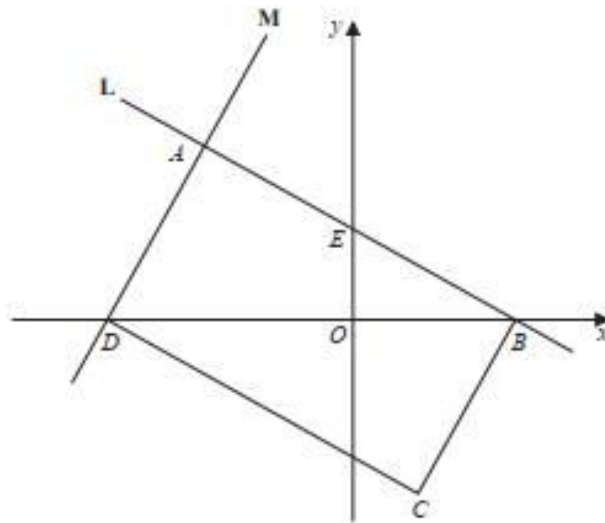
3.

3 The line **L** is shown on the grid.

Find an equation for **L**.

....

(Total for Question 3 is 3 marks)

Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Higher Tier

4.

19

ABCD is a rectangle.

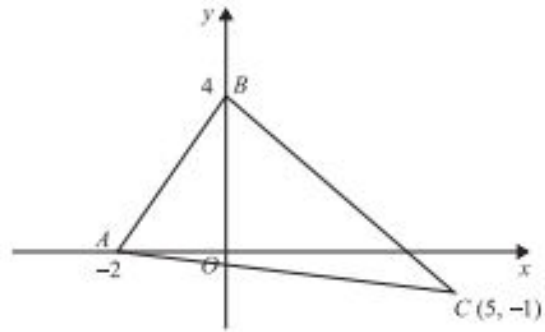*A, E* and *B* are points on the straight line L with equation $x + 2y = 12$
A and *D* are points on the straight line M.

$AE = EB$

Find an equation for M.

Pearson Edexcel - Specimen Papers Set 1 - Paper 1 (Non-Calculator) Higher Tier

5.

23

Find an equation of the line that passes through *C* and is perpendicular to *AB*.

Pearson Edexcel - Specimen Papers Set 1 - Paper 2 (Calculator) Higher Tier

6.

23 Here is a circle, centre O, and the tangent to the circle at the point $P(4, 3)$ on the circle.
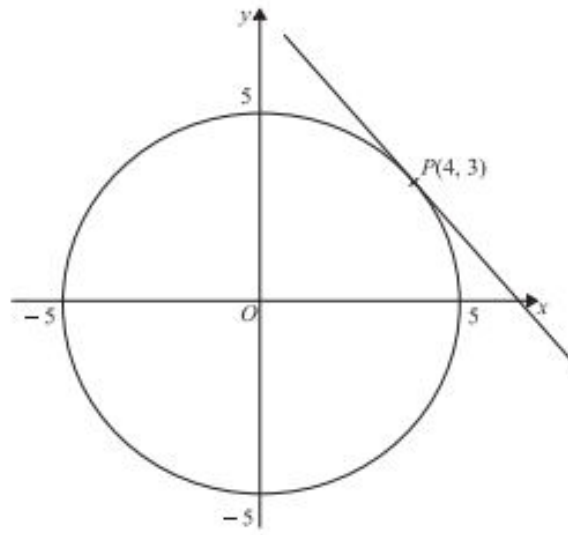
Find an equation of the tangent at the point P.

....

(Total for Question 23 is 3 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 3 (Calculator) Higher Tier

7.

3 Line **L** is drawn on the grid below.
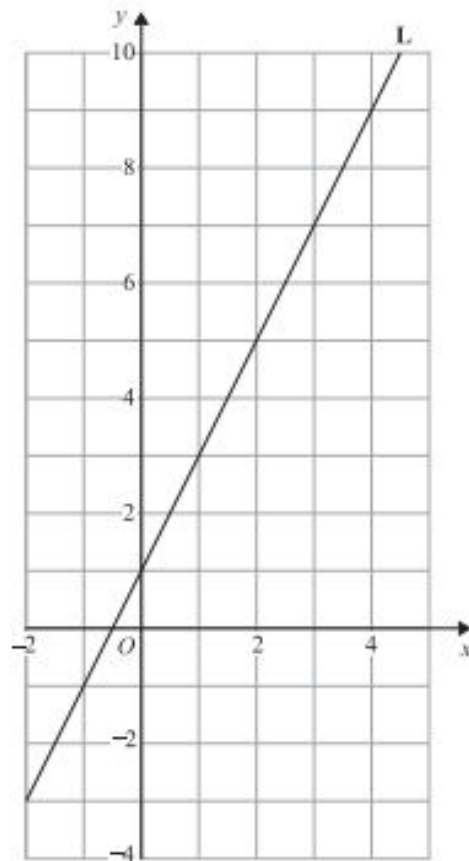
Find the equation for the straight line **L**.
Give your answer in the form $y = mx + c$

....

(Total for Question 3 is 3 marks)

Pearson Edexcel - Sample Paper 1 - (Non-Calculator) Higher Tier

8.

25 $A(-2, 1)$, $B(6, 5)$ and $C(4, k)$ are the vertices of a right-angled triangle ABC.
Angle ABC is the right angle.

Find an equation of the line that passes through A and C.
Give your answer in the form $ay + bx = c$ where a, b and c are integers.

....

(Total for Question 25 is 5 marks)

Pearson Edexcel - Friday 6 November 2015 - Paper 2 (Calculator) Higher Tier

9.

17 L_1 and L_2 are parallel lines.

The equation of L_1 is $y = 3x + 2$
L_2 passes through the point (3, 4).

Find an equation for L_2.

....

Pearson Edexcel - Monday 8 June 2015 - Paper 2 (Calculator) Higher Tier

10.

17 The line N is drawn below.
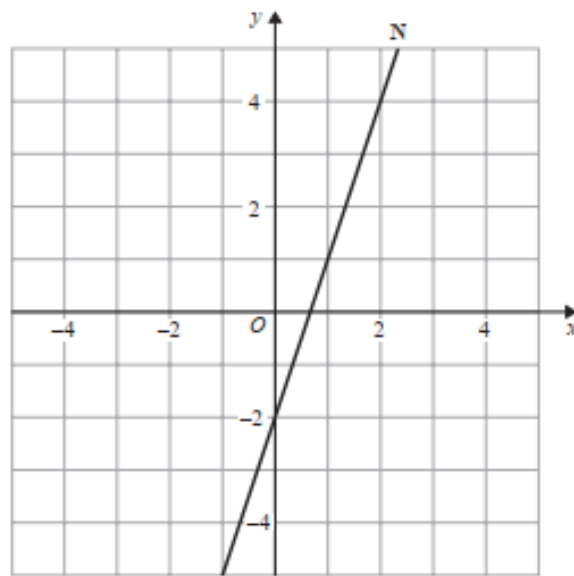
Find an equation of the line perpendicular to line N that passes through the point (0, 1).

....

(Total for Question 17 is 3 marks)

Pearson Edexcel - Monday 9 June 2014 - Paper 1 (Non-Calculator) Higher Tier

11.

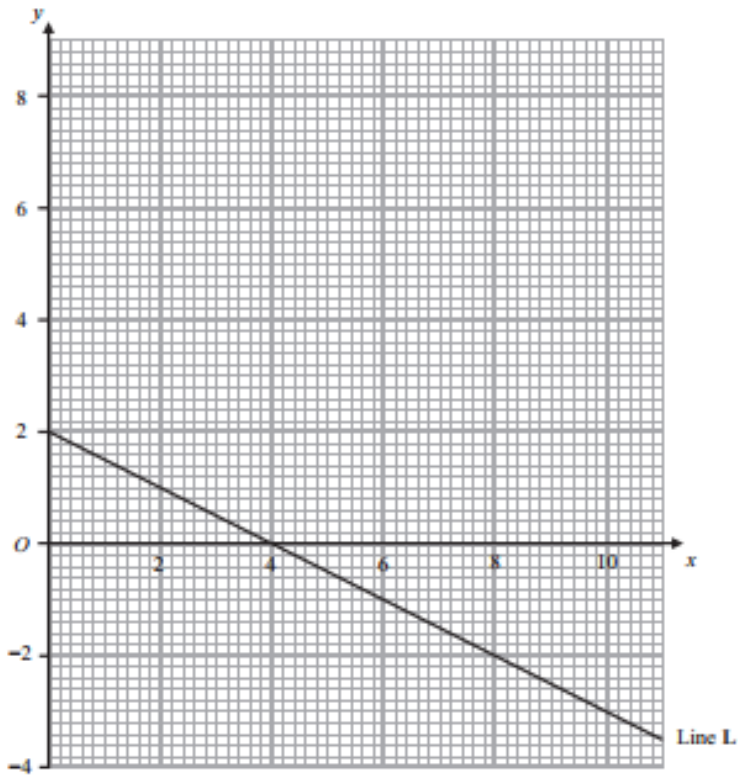19 The diagram shows a straight line, L_1, drawn on a grid.
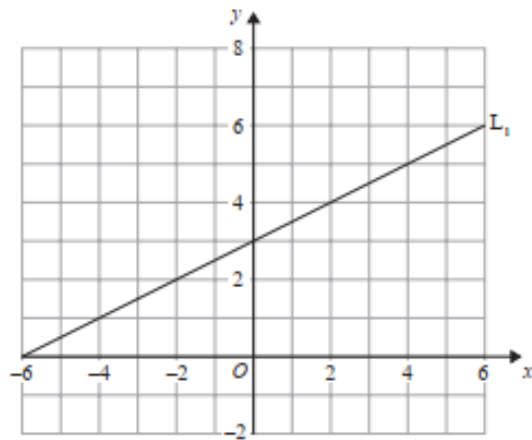
A straight line, L_2, is parallel to the straight line L_1 and passes through the point $(0, -5)$.

Find an equation of the straight line L_2.

....

(Total for Question 19 is 3 marks)

Pearson Edexcel - Monday 6 June 2011 - Paper 3 (Non-Calculator) Higher Tier

12.

21.

Line L is drawn on the grid.

(a) Work out the gradient of Line L.

....

(2)

Another line, Line M, is parallel to Line L and passes through the point (6, 2).

(b) Find an equation for Line M.

....
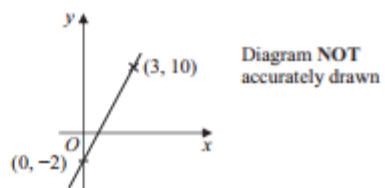
(2)

(Total 4 marks)

23. A straight line passes through (0, −2) and (3, 10).

Find the equation of the straight line.

Diagram **NOT** accurately drawn
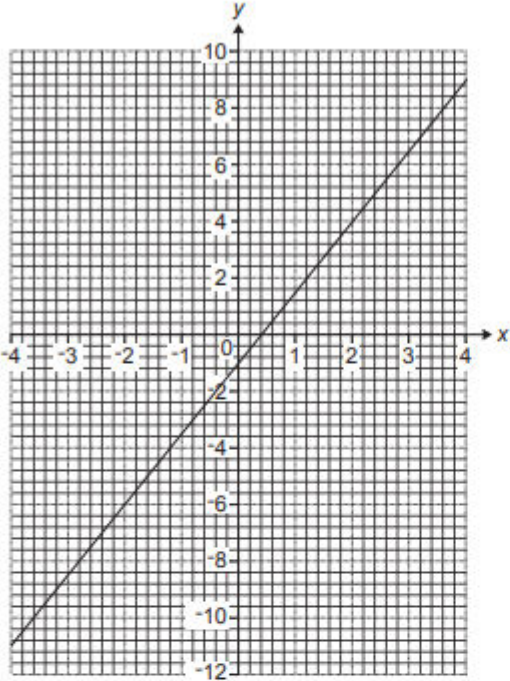
....

(Total 3 marks)

OCR GSCE – Tuesday 3 November 2020 – Paper 4 (Calculator) Higher Tier

14.

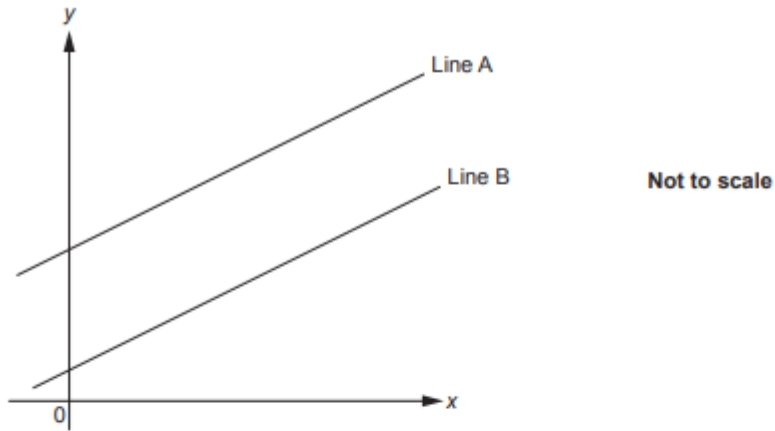**7** This graph shows part of a straight line.

(a) Show that the gradient of the line is 2.5. **[1]**

(b) Write down the equation of the line.

(b) .... **[2]**

15.

8   The graph shows two parallel lines, Line A and Line B.

Line A has equation $y = 6x + 7$.
Line B passes through the point (4, 26).

Find the equation of Line B.

.... **[4]**

18 P is the point (0, ⁻1) and Q is the point (5, 9).

Find the equation of the line through P that is perpendicular to the line PQ.

.... **[5]**

18 **(a)** A straight line passes through the point (0, 6) and is perpendicular to $y = 4x - 5$.

Find the equation of this line, giving your answer in the form $y = mx + c$.

(a) .... [3]

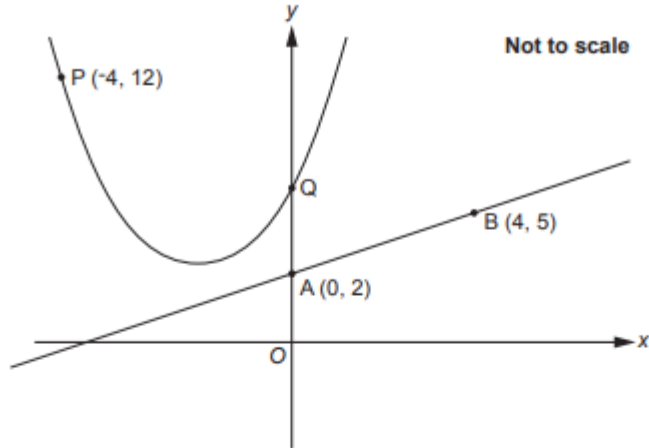**(b)** Work out the coordinates of the intersection of the graphs of $y = 4x - 5$ and $y = x^2 - 17$.

(b) (......................... , ...)

(......................... , ...) [6]

5 The diagram shows a straight line that passes through points A and B, and a curve that passes through points P and Q.

(a) Find the equation of the straight line.

(a) .... [3]

(b) The equation of the curve is $y = x^2 + kx + 8$.

Find the value of k.

(b) $k =$ .... [3]

(c) Diann draws line BQ.
She says

> Triangle ABQ is isosceles.

Is Diann correct?
You must show all your working.

.... [4]

AQA GSCE – Thursday 8 June 2020 – Paper 3 (Calculator) Higher Tier

19.

2   Circle the equation of the line that is parallel to $y = \dfrac{1}{2}x + 3$

[1 mark]

$$y = -2x \qquad\qquad y = 2x \qquad\qquad y = \dfrac{1}{2}x \qquad\qquad y = -\dfrac{1}{2}x$$

AQA GSCE – Thursday 8 June 2020 – Paper 3 (Calculator) Higher Tier

20.

27   The equation of a curve is $y = (x - 1)^2 - 6$

Circle the coordinates of the turning point.
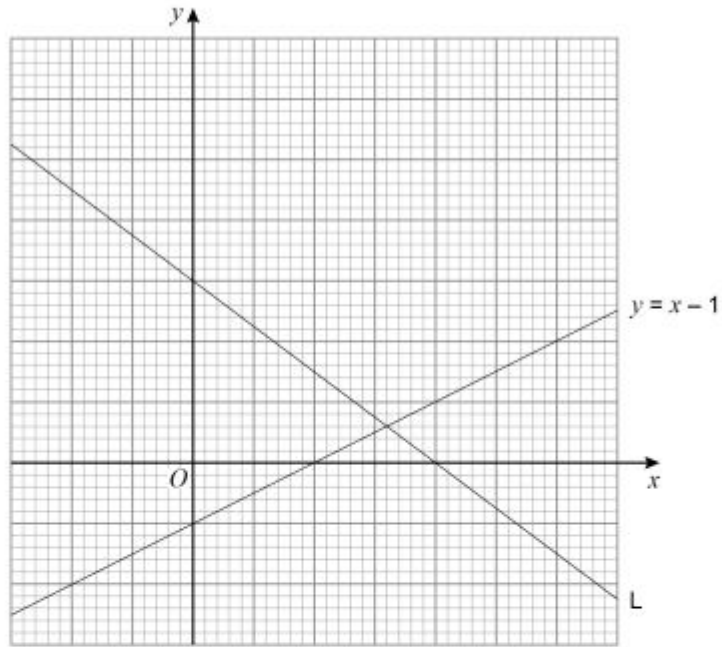
[1 mark]

$$(-1, -6) \qquad\qquad (1, 6) \qquad\qquad (-1, 6) \qquad\qquad (1, -6)$$

21.

15   Here is line L and the graph of $y = x - 1$
The scales of the axes are not shown.

Work out the equation of line L.

[4 marks]

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Answer _____

22.

12   A straight line

             has gradient 4

             and

             passes through the point (5, 23)

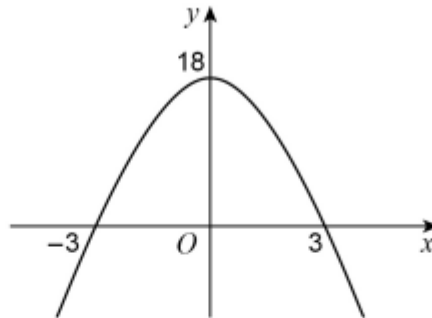Work out the equation of the line.

Give your answer in the form $y = mx + c$

[3 marks]

Answer _____

23.

25   A quadratic curve intersects the axes at (–3, 0), (3, 0) and (0, 18)

Not drawn
accurately

Work out the equation of the curve.

[3 marks]

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Answer _____

24.

20   Curve P has equation $y = 2(x - 1)^2 - 5$

Curve Q is a reflection in the y-axis of curve P.

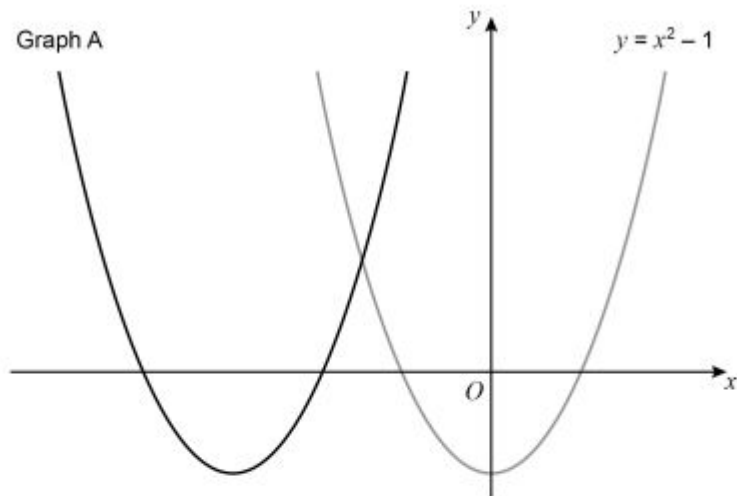Work out the equation of curve Q.

Give your answer in the form $y = ax^2 + bx + c$ where a, b and c are integers.

[3 marks]

Answer _____

25.

29   Here are sketches of two graphs.

Graph A

$y = x^2 - 1$

The graph of $y = x^2 - 1$ is translated 3 units to the left to give graph A.

29 (a)   The equation of graph A can be written in the form $y = x^2 + bx + c$

Work out the values of b and c.

[3 marks]

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$b =$ _____

$c =$ _____

29 (b) The graph of $y = x^2 - 1$ is reflected in the x-axis to give graph B.

Work out the equation of graph B.

[1 mark]

_____

_____

Answer _____

AQA GSCE – Thursday 7 June 2018 – Paper 2 (Calculator) Higher Tier

26.

26 A curve has equation $y = 4x^2 + 5x + 3$

A line has equation $y = x + 2$

Show that the curve and the line have **exactly** one point of intersection.

Do **not** use a graphical method.

[4 marks]

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AQA GSCE – Tuesday 12 June 2018 – Paper 3 (Calculator) Higher Tier

27.

19   The equation of a straight line is $3x + 2y = 24$

Circle the point where the line crosses the x-axis.

[1 mark]

(0, 8)   (12, 0)   (0, 12)   (8, 0)

AQA GSCE – Wednesday 8 November 2017 – Paper 3 (Calculator) Higher Tier

28.

4   Circle the equation of the line that is parallel to the x-axis.

[1 mark]
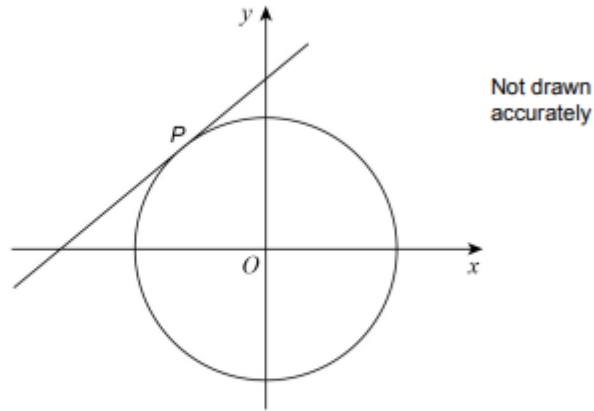
$y = -5$ $x - y = 0$ $x = 3$ $x + y = 0$

AQA GSCE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

29.

27 $P(-1, 4)$ is a point on a circle, centre O

Not drawn accurately

Work out the equation of the tangent to the circle at P.

Give your answer in the form $y = mx + c$

[4 marks]

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Answer _____

AQA GSCE – Sample Paper 2 (Calculator) Higher Tier

30.

4   Circle the equation of a line that is parallel to $y = 5x - 2$

[1 mark]

$y = 2x - 5$ $y = 5x + 2$ $y = 3x - 2$ $y = -\dfrac{1}{5}x - 2$

AQA GSCE – Sample Paper 3 (Calculator) Higher Tier

31.

27   The curve with equation $y = x^2 - 5x + 2$ is reflected in the x-axis.

Circle the equation of the reflected curve.

[1 mark]

$y = x^2 - 5x - 2$ $y = -x^2 + 5x + 2$

$y = -x^2 + 5x - 2$ $y = x^2 + 5x + 2$