

GCSE Maths: Tables of values and plotting quadratic graphs (Foundation): worksheet

GCSE Maths - Quadratic and Other Graphs - Foundation - Lesson 13.1

Name: _____

Date: _____

Score: _____

15 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch13-quadratic-other-graphs/foundation/tables-of-values-and-plotting-quadratic-graphs/

Exercise 13A Tables of values and plotting quadratics Non-calculator

1 Work out the value of y for each rule when x takes the value shown. Show the calculation.

(a) $y = x^2$ when $x = -2$

Answer: _____

(b) $y = x^2 + 3$ when $x = -1$

Answer: _____

(c) $y = x^2 - 5$ when $x = 3$

Answer: _____

(d) $y = 2x^2$ when $x = -2$

Answer: _____

(e) $y = x^2 + x$ when $x = -3$

Answer: _____

(f) $y = x^2 - 3x + 1$ when $x = -2$

Answer: _____

2 Complete the table of values for $y = x^2$.

x	-3	-2	-1	0	1	2	3
y							

Answer: _____

3 Complete the table of values for $y = x^2 + 2$. Some values are already filled in.

x	-3	-2	-1	0	1	2	3
y		6		2		6	

Answer: _____

4 Complete the table of values for $y = x^2 - 4$.

x	-3	-2	-1	0	1	2	3
y							

Answer:

- 5 Complete the table of values for $y = x^2 + x$.

x	-3	-2	-1	0	1	2
y						

Answer:

- 6 (a) Complete the table of values for $y = x^2 + 1$. (b) Draw the graph of $y = x^2 + 1$ for values of x from -3 to 3.

x	-3	-2	-1	0	1	2	3
y							

Answer:

- 7 (a) Complete the table of values for $y = x^2 - 4x + 3$. (b) Draw the graph of $y = x^2 - 4x + 3$ for values of x from -1 to 5.

x	-1	0	1	2	3	4	5
y							

Answer:

- 8 (a) Complete the table of values for $y = -x^2 + 2x + 3$. (b) Draw the graph of $y = -x^2 + 2x + 3$ for values of x from -2 to 4.

x	-2	-1	0	1	2	3	4
y							

Answer:

- 9 Aisha is working out y when $x = -3$ for $y = x^2 + 2$. She writes: " $(-3)^2 = -9$, so $y = -9 + 2 = -7$." Explain her mistake and work out the correct value.

Answer:

- 10 For each point, say whether it lies on the graph of $y = x^2 - 3$.

(a) (2, 1)

Answer:

(b) (-1, -4)

Answer:

(c) $(0, -3)$

Answer:

(d) $(-3, 6)$

Answer:

11 Without drawing the graph, say whether each quadratic graph is U-shaped or n-shaped.

(a) $y = x^2 + 5$

Answer:

(b) $y = -x^2 + 5$

Answer:

(c) $y = -x^2 + 3$

Answer:

(d) $y = x^2 - 5x$

Answer:

12 The point $(k, 11)$ lies on the graph of $y = x^2 + 2$. Work out the two possible values of k .

Answer:

13 Explain why the graph of $y = x^2$ never goes below the x -axis.

Answer:

14 Ben draws the graph of $y = x^2 - 2x - 3$ by joining his plotted points with a ruler. Explain why this is wrong.

Answer:

15 (a) Complete the table of values for $y = x^2 - 6x + 8$. (b) The point $(1, 3)$ is on the graph. Use the symmetry of the table to write down the x -value of another point with $y = 3$. (c) Write down the equation of the line of symmetry. (d) Explain how you know.

x	0	1	2	3	4	5	6
y							

(a) Complete the table.

Answer:

(b) Another point with $y = 3$.

Answer:

(c) Line of symmetry.

Answer:

(d) Explain.

Answer: