

# Algebra: Graphing Equations by Plotting Points

**N**

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Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_

**DIRECTIONS** Complete the table of values for each equation, then identify the type of graph (line, parabola, etc.).

1 Find y when x=3:

$$y = 2x - 1$$

Answer: \_\_\_\_\_

2 Find y when x=-2:

$$y = 3x + 4$$

Answer: \_\_\_\_\_

3 Find y when x=2:

$$y = x^2 - 3$$

Answer: \_\_\_\_\_

4 Find y when x=-1:

$$y = x^2 + 2x$$

Answer: \_\_\_\_\_

5 Find y when x=0:

$$y = -2x + 5$$

Answer: \_\_\_\_\_

6 Find y when x=4:

$$y = (1/2)x - 1$$

Answer: \_\_\_\_\_

7 Find x-intercept:

$$y = 2x - 6$$

Answer: \_\_\_\_\_

8 Find y-intercept:

$$y = 3x - 9$$

Answer: \_\_\_\_\_

9 Find y when x=-3:

$$y = x^2 - x + 1$$

Answer: \_\_\_\_\_

10 Identify graph type:

$$y = x^2 + 2$$

Answer: \_\_\_\_\_

# Answer Key & Solutions

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## TEACHER NOTES

Choose easy  $x$ -values (often  $-2, -1, 0, 1, 2$ ). Substitute each into the equation and solve for  $y$ . Plot and connect the po

ints.

1  $y=2x-1, x=3$

**$= y = 5$**

$y=2(3)-1=6-1=5$

2  $y=3x+4, x=-2$

**$= y = -2$**

$y=3(-2)+4=-6+4=-2$

3  $y=x^2-3, x=2$

**$= y = 1$**

$y=4-3=1$

4  $y=x^2+2x, x=-1$

**$= y = -1$**

$y=1-2=-1$

5  $y=-2x+5, x=0$

**$= y = 5$**

$y$ -intercept:  $y=5$

6  $y=1/2x-1, x=4$

**$= y = 1$**

$y=2-1=1$

7  $y=2x-6$   $x$ -intercept

**$= x = 3$**

Set  $y=0$ :  $0=2x-6, x=3$

8  $y=3x-9$   $y$ -intercept

**$= y = -9$**

Set  $x=0$ :  $y=-9$

9  $y=x^2-x+1, x=-3$

**$= y = 13$**

$y=9+3+1=13$

10  $y=x^2+2$

**$= \text{Parabola}$**

Highest power is 2  $\rightarrow$  parabola (opens up, vertex  $(0,2)$ )