

Name: _____

Quadratic Functions Word Problems

1. Graph the following functions (show all your calculations!)

a. $y = \frac{2}{3}x^2$

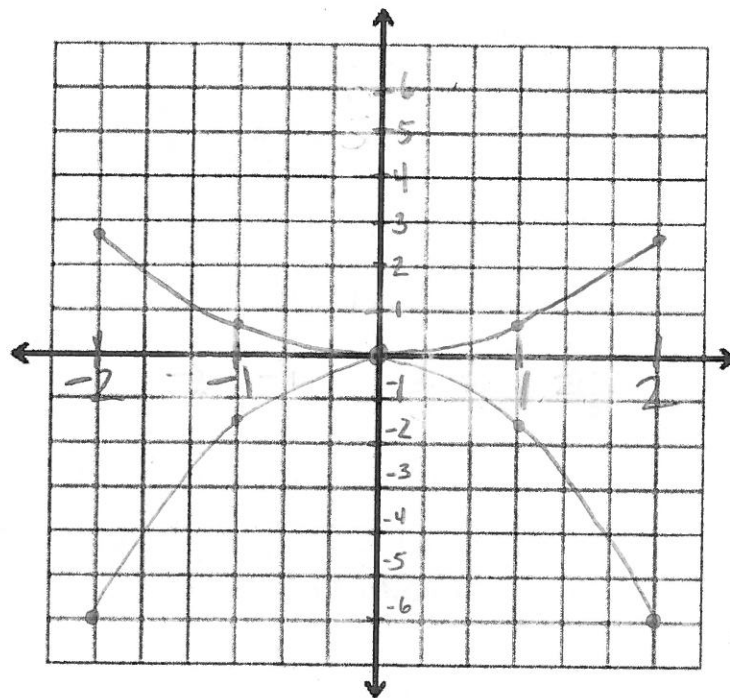
b. $y = -\frac{3}{2}x^2$

Graph a

x	y
-2	2.7
-1	0.7
0	0
1	0.7
2	2.7

Graph b

x	y
-2	-6
-1	-1.5
0	0
1	-1.5
2	-6



b. Which graph (Graph a or Graph b) is more vertically stretched? b

c. Which graph is positive? Graph a

d. Which graph is negative? Graph b

a. $\frac{2}{3} = 0.67$ b. $\frac{3}{2} = 1.5$ ✓

2. A quadratic function f is given by the rule $y = ax^2$, passes through the point $(4, -24)$. What is the rule of this function?

Step 1: x_1, y_1

Step 2: $y = a(x)^2$

$$-24 = a(4)^2$$

Step 3: $-24 = a(16)$

$$\frac{-24}{16} = \frac{a(16)}{16}$$

$$a = \cancel{16} -1.5$$

$$a = \cancel{16}$$

Step 4:

$$y = \cancel{16} x^2$$

$$y = -1.5x^2$$

3. The parabola on the right is defined by the equation $y = ax^2$ and passes through point $A(-4, 8)$. Point B on this parabola passes through an **x-coordinate of 6**. What is the y-coordinate of point B.

$$A(-4, 8) \quad B(6, y_2)$$

Step 1: $x_1, y_1 \quad x_2$

Step 2: $y_1 = ax_1^2$

$$8 = a(-4)^2$$

Step 3: $8 = a(16)$

$$\frac{8}{16} = \frac{a(16)}{16}$$

$$a = \frac{8 \div 8}{16 \div 8} = \frac{1}{2}$$

Step 4: $y = \frac{1}{2}x^2$

Step 5: $y_2 = \frac{1}{2}(6)^2$

$$y_2 = \frac{1}{2}(36)$$

$$y_2 = 18$$

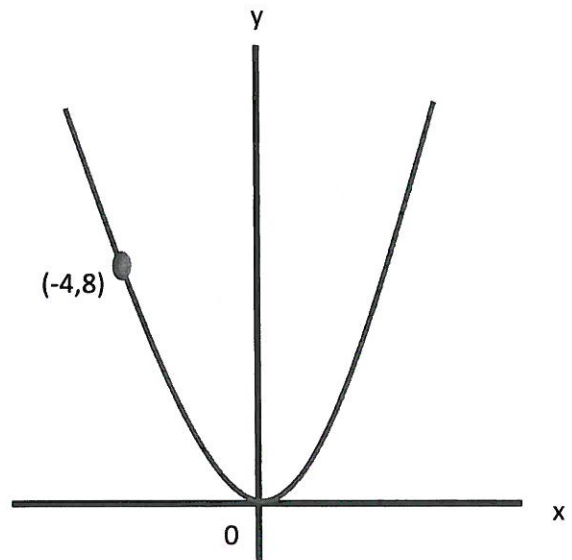
$$(6, 18)$$

a) 36

b) 18

c) 72

d) 12



Quadratic Functions

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Answer Sheet

Question 1

0.5 m

Question 2

$$y = 6x^2$$

Question 3

48 m

Question 4

19.6 m

Question 5

50 cm

Question 6

135 m

Question 7

$$y = -5x^2$$

Question 8

$$y = -6x^2$$

Question 9

115.2 m

Question 10

$$y = -\frac{4}{5}x^2$$

