8. $y = x^2 - 6x + 5$

X (5)
+ + (6)

$y = (x-5)(x-1)$

$-5, -1$

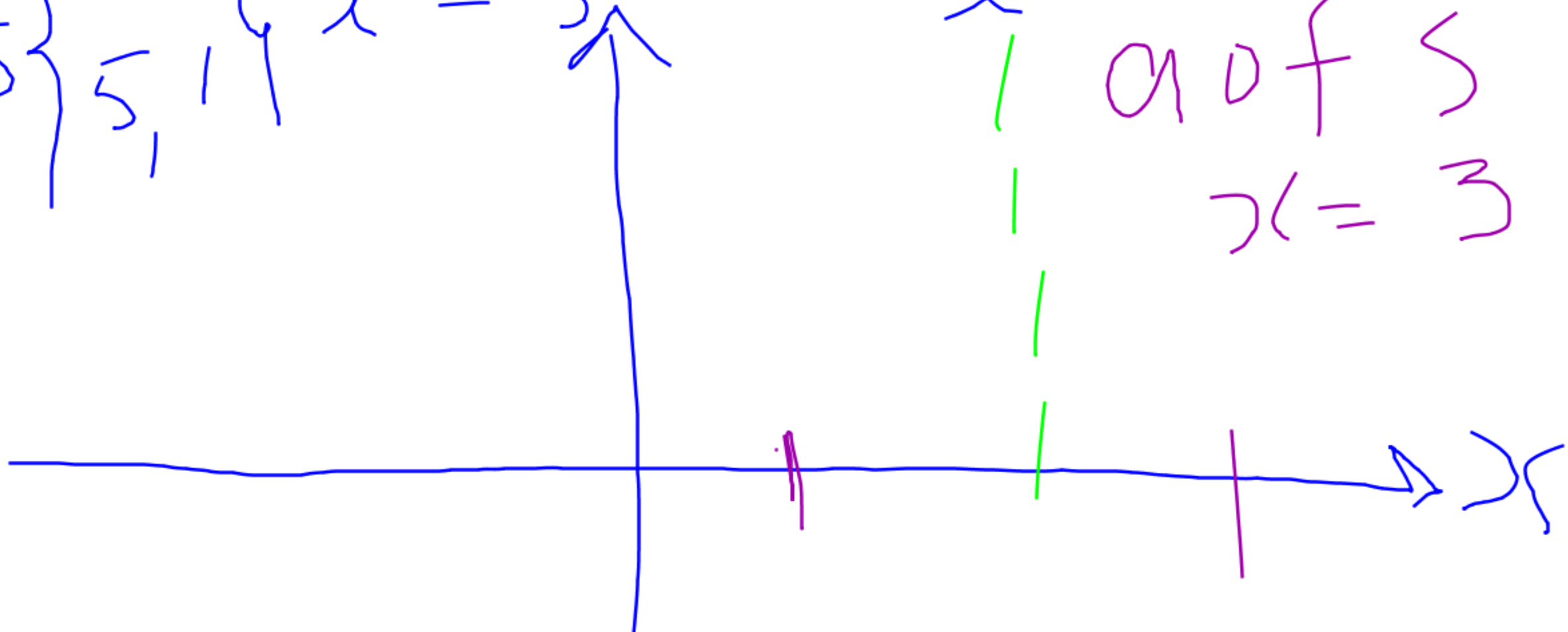
either $x-5=0$ or $x-1=0$

$x=5$ $x=1$

55} 5, 1

1 and 5

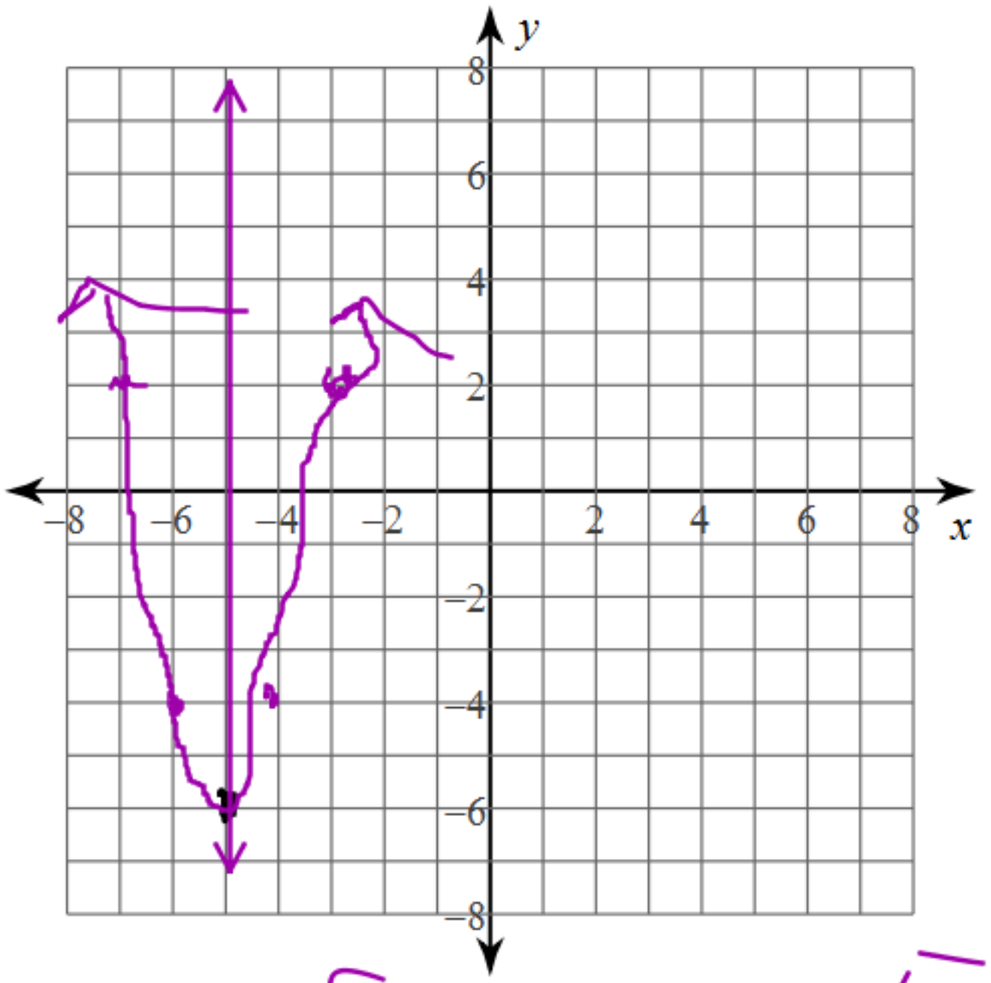
$x=3$



Identify the vertex and axis of symmetry of each. Then sketch the graph. Maximum or minimum?

$y = a(x-h)^2 + k$ (h, k)

1) $y = 2(x+5)^2 - 6$ $-5, -6$



x	y	
2	4	x 2
1	1	x 2
0	0	
−1	1	
−2	4	

* 4 of 5 $x \geq -5$

g) $y = -0.5(x + 6)^2 + 7$ h) $y = 2(x - 8)^2 + 2$

i) $y = 7.5(x + 2)^2 - 1$ j) $y = -0.8(x - 4)^2 + 6$

For help with question 3, refer to Example 2.

3. Graph each quadratic relation by plotting the vertex and two other points. Then, draw a smooth curve through the points.

a) $y = 4(x - 6)^2 + 10$ b) $y = -0.25(x + 4)^2 - 2$

c) $y = 0.8(x + 1)^2 + 9$ d) $y = -2.5(x - 9)^2 - 5$

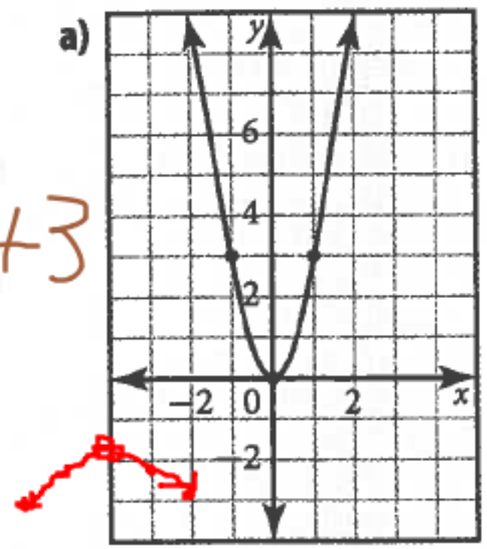
e) $y = 0.2(x - 3)^2 - 7$ f) $y = 5(x + 7)^2 + 3$

g) $y = 6(x + 2)^2 - 1$ h) $y = -0.5(x - 10)^2 + 6$

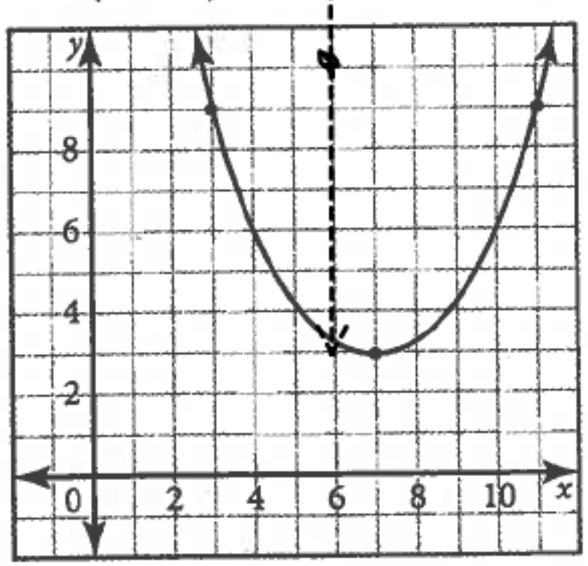
For help with questions 4 and 5, refer to Example 3.

4. Identify the coordinates of the vertex of each parabola. Then, write an equation for the relation in the form $y = a(x - h)^2 + k$.

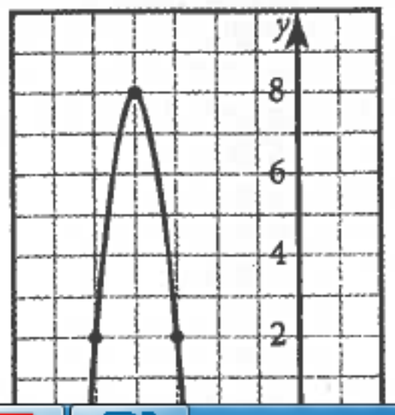
a)



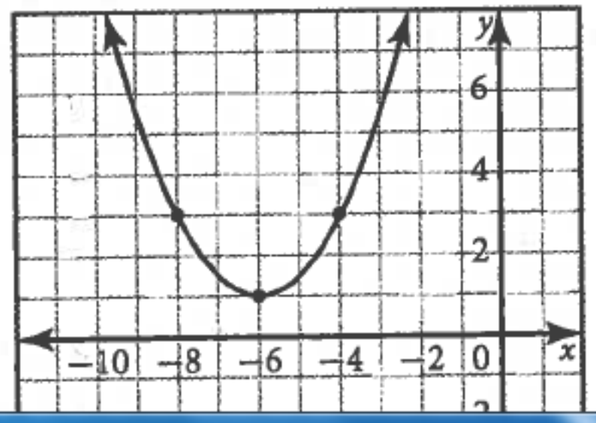
b)



c)



d)



a)

Vertex
(0, 0)
$y = 3x^2$

b) (7, 3)
$y = \frac{1}{3}(x-7)^2 + 3$

c) $y = 0.8(x + 1)^2 + 9$

d) $y = -2.5(x - 9)^2 - 5$

e) $y = 0.2(x - 3)^2 - 7$

f) $y = 5(x + 7)^2 + 3$

g) $y = 6(x + 2)^2 - 1$

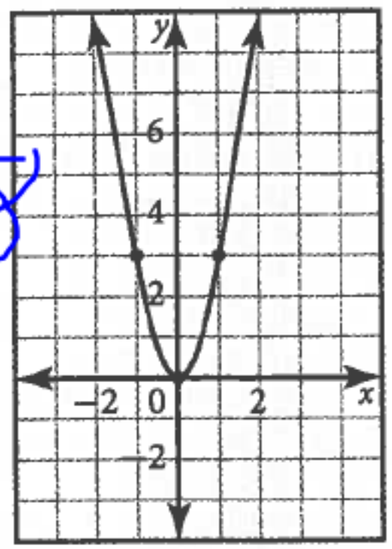
h) $y = -0.5(x - 10)^2 + 6$

h, k
(-4, 8)
y = 6(x+4)^2 + 8

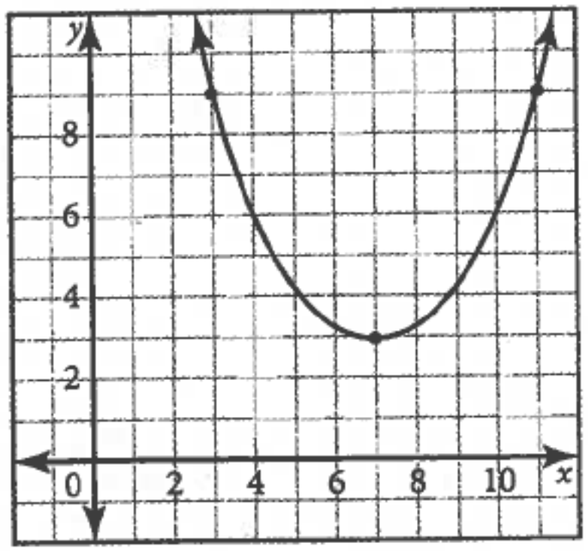
For help with questions 4 and 5, refer to Example 3.

4. Identify the coordinates of the vertex of each parabola. Then, write an equation for the relation in the form $y = a(x - h)^2 + k$.

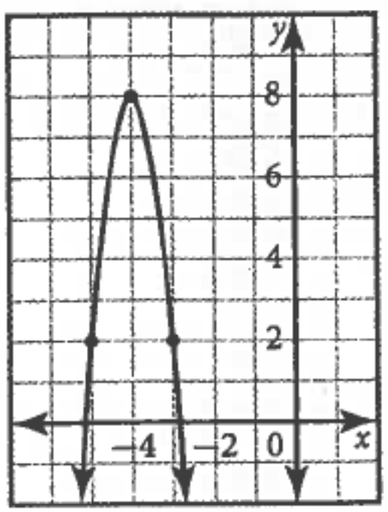
a)



b)



c)



d)