

Name: _____

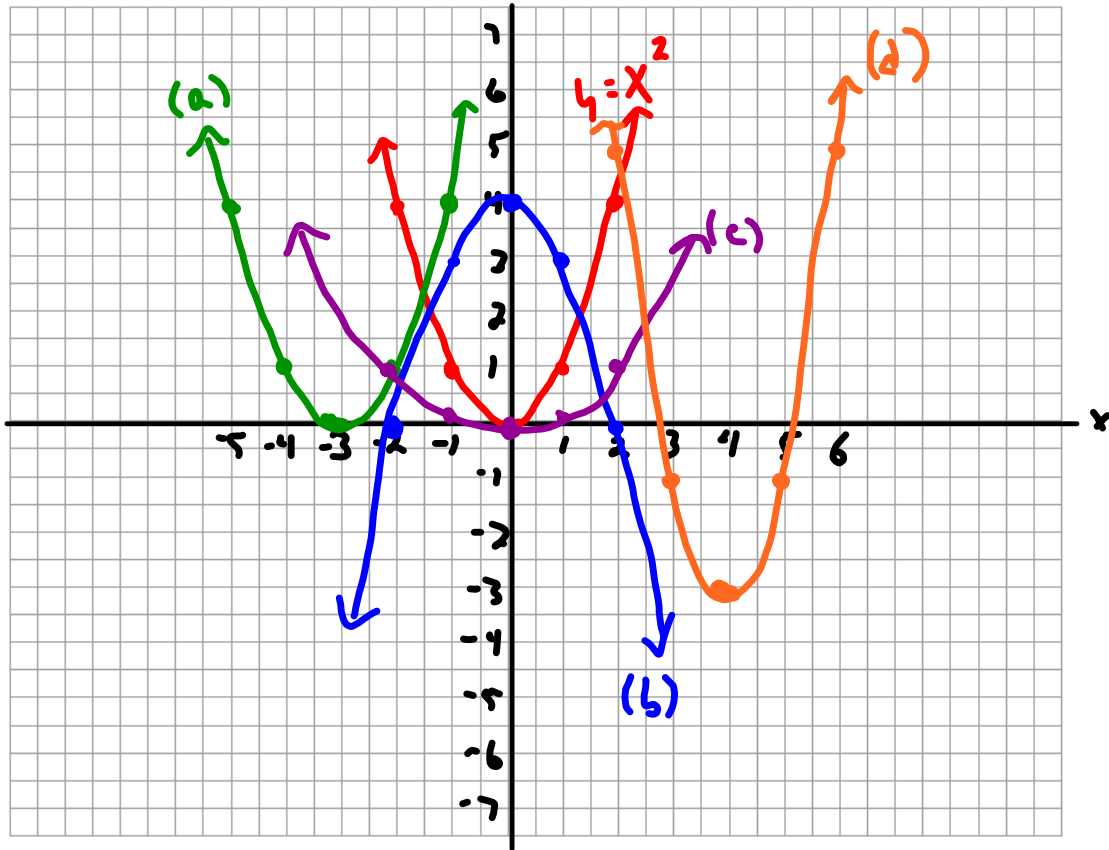
Show work needed to justify your answer.

Date: _____

HW: # 9: Math IBSL - Standard 9 - Transformations of Functions

5 points

1. Sketch the parent quadratic $y = x^2$, and the graph of $y = g(x)$ on the same axes. Then write down the coordinates of the vertex and the **equation** for the axis of symmetry for the graph of g .



a $g(x) = (x + 3)^2$

b $g(x) = -x^2 + 4$

c $g(x) = \frac{1}{4}x^2$

d $g(x) = 2(x - 4)^2 - 3$

(a) vertex: $(-3, 0)$
 A of S: $x = -3$
 "shift 3 left"

(b) Reflect over x , up 4
 vertex: $(0, 4)$
 A of S: $x = 0$

(c) Vertical shrink
 by $\frac{1}{4}$
 vertex: $(0, 0)$
 A of S: $x = 0$

(d) vertex: $(4, -3)$
 A of S $x = 4$
 Vertical stretch by 2

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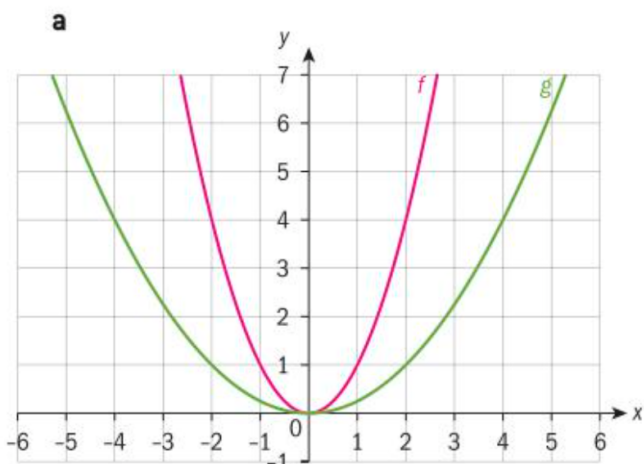
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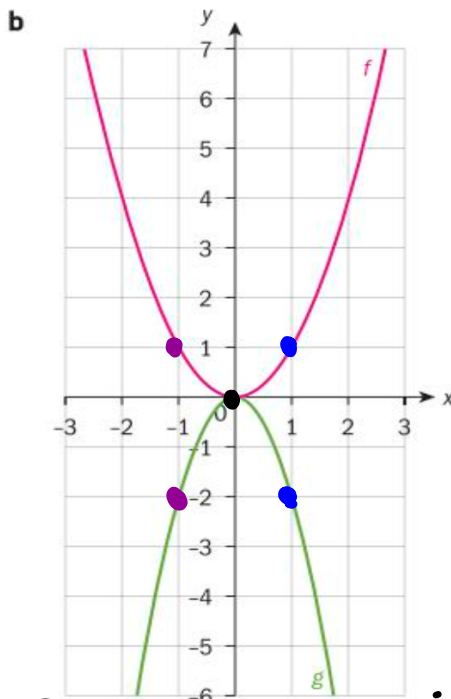
HW: # 9: Math IBSL - Standard 9 - Transformations of Functions

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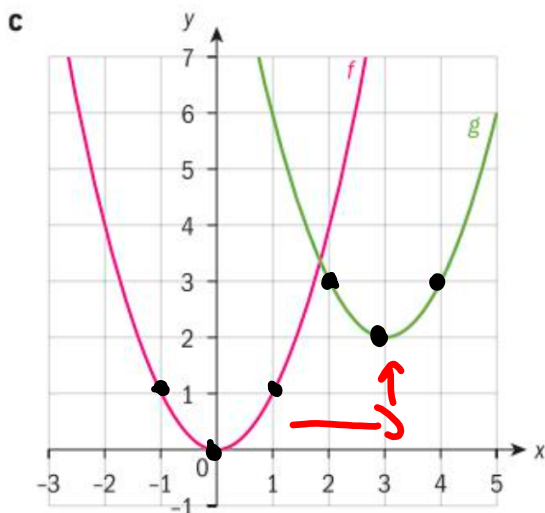
2. Describe the transformations of the graph of $f(x) = x^2$ that lead to the graph of g . Then write an equation for $g(x)$



Vertical shrink by factor of $\frac{1}{4}$
 $g(x) = \frac{1}{4} x^2$

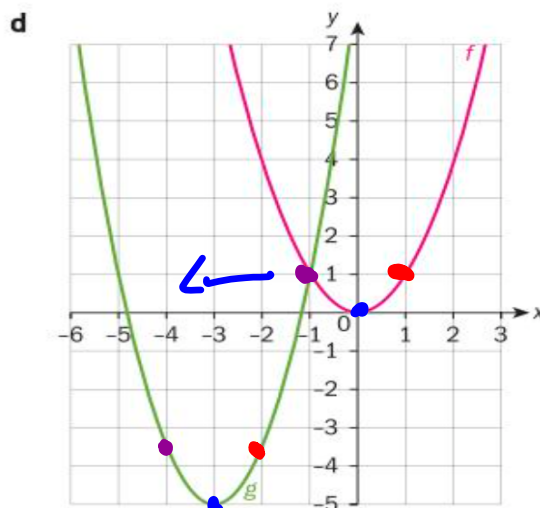


Reflect over y-axis
 Vert stretch by factor 2
 $g(x) = -2x^2$



Horiz shift Right 3
 vertical shift up 2

$$g(x) = (x-3)^2 + 2$$



Horiz shift left 3
 vert stretch by factor 1.5
 vert shift down 5

$$g(x) = \frac{3}{2} (x+3)^2 - 5$$

