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Homework

Name: _____

Which function includes a translation of 3 units to the left?

a. $f(x) = (x+3)^2 + 1$

c. $f(x) = (x-3)^2 + 1$

b. $f(x) = 3x^2 + 1$

d. $f(x) = (x+1)^2 - 3$

Which equation shows a translation of 3 left and vertical compression by a factor of 2 to the graph of $y = x^2$?

a. $y = 2(x-3)^2$

c. $y = \frac{1}{2}(x-3)^2$

b. $y = 2(x+3)^2$

d. $y = \frac{1}{2}(x+3)^2$

Which correctly identifies the values of the parameters a , h , and k for the function $f(x) = -2(x+3)^2 + 1$?

a. $a = -2, h = 3, k = 1$

c. $a = -2, h = -3, k = 1$

b. $a = 2, h = -3, k = -1$

d. $a = -2, h = -3, k = -1$

Write an equation for each function formed from the base graph $f(x) = x^2$ using the given transformations:

- A) Reflected vertically
Vertical stretch factor of 3
Translated 5 units to the right
Translated 7 units down

- B) Vertical compression factor of $\frac{1}{5}$
Translated 4 units to the left

- C) Vertical reflection
Translated 3 units up

QUADRATIC FUNCTION TRANSFORMATIONS

Compare each graph to the parent function $y = x^2$. Determine the transformations for each quadratic function.

1. $y = \frac{2}{3}x^2$	2. $y = x^2 - 6$	3. $y = (x - 1)^2$	4. $y = 6x^2$	5. $y = -x^2$
6. $y = -x^2 + 3$	7. $y = \frac{3}{8}x^2 - 4$	8. $y = (x + 5)^2 - 2$	9. $y = 4x^2 + 1$	10. $y = -2x^2$
11. $y = \frac{3}{2}(x - 4)^2 + 1$	12. $y = -5(x + 6)^2$	13. $y = -\frac{1}{3}x^2 - 7$	14. $y = -(x - 2)^2 + 9$	15. $y = \frac{1}{4}(x + 1)^2 - 3$