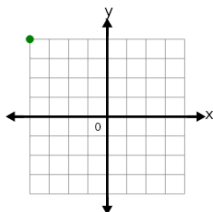


Identify vertical translations of functions

1

Translate this point by right 2



A (4,-2)

B (-2,4)

2If the vertex of $f(x)$ is (a,b) , what is the vertex of $g(x)$?

$$g(x) = 5f(x)$$

A

$$\left(\frac{a}{5}, b\right)$$

B

$$(a, 5 \cdot b)$$

3If the range of $f(x)$ is $[a,b]$, which function $g(x)$ would have this range?

$$[a, b]$$

A

$$g(x) = -f(x)$$

B

$$g(x) = f(-x)$$

4If the vertex of $f(x)$ is (a,b) , what is the vertex of $g(x)$?

$$g(x) = f(x) - p$$

A

$$(a, b + p)$$

B

$$(a, b - p)$$

5Using the mapping notation, how does this variable value transform the graph of f ?

$$g(x) = a f(b(x-h)) + k$$

$$(x, y) \mapsto \left(\frac{x}{b} + h, ay + k\right)$$

$$b = 4$$

A vertically compress by a factor of 4

B horizontally compress by a factor of 4

C reflect over the y-axis

D reflect over the x-axis

6How is the graph of f transformed to produce g ?

$$g(x) = a f(b(x-h)) + k$$

$$(x, y) \mapsto \left(\frac{x}{b} + h, ay + k\right)$$

$$g(x) = f(x) + 4$$

A shift down by 4

B vertically stretch by a factor of 4

C shift left by 4

D shift up by 4

7If the vertex of $f(x)$ is (a,b) , which function $g(x)$ would have this vertex?

$$(a - 5, b)$$

A

$$g(x) = f(x + 5)$$

B

$$g(x) = f(x - 5)$$

8Which function $g(x)$ shows this transformation of $f(x)$?

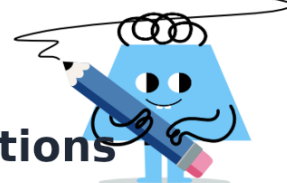
Vertical stretch : 2

A

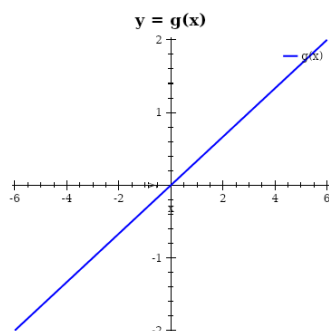
$$g(x) = f(2x)$$

B

$$g(x) = 2f(x)$$



Identify vertical translations of functions

9Which transformed function $g(x)$ is this graph showing?

A

$$f(x) = x$$
$$g(x) = f(0.33x)$$

B

$$f(x) = x$$
$$g(x) = 0.33f(x)$$

12Using the mapping notation, how does this variable value transform the graph of f ?

$$g(x) = a f(b(x-h)) + k$$
$$(x, y) \mapsto \left(\frac{x}{b} + h, ay + k\right)$$

$$h = -2$$

A shift right
by 2B horizontally
stretch by a
factor of 2C shift down
by 2D shift left
by 2**10**Which function applies this transformation to f ?

$$g(x) = a f(b(x-h)) + k$$

$$(x, y) \mapsto \left(\frac{x}{b} + h, ay + k\right)$$

horizontally compress by a factor of 3

A

$$g(x) = f(x) + 3$$

B

$$g(x) = f(3x)$$

11What does this transformation produce in $f(x)$?

$$g(x) = f(t \cdot x)$$

$$t > 1$$

A

Vertical compression : t

B

Horizontal compression : t

C

Horizontal stretch : t