



Identify vertical stretches and compressions

1

If the range of $f(x)$ is $[a, b]$, what is the range of $g(x)$?

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

A $[a, b]$

B $[a + 5, b + 5]$

C $[a - 5, b - 5]$

2

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

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

A $(a + 2, b)$

B $(a - 2, b)$

3

If the range of $f(x)$ is $[a, b]$, what is the range of $g(x)$?

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

A $[a + z, b + z]$

B $[a - z, b - z]$

4

Which function $g(x)$ shows these transformations of $f(x)$?

Reflect in Y – Axis

Vertical compression : 0.25

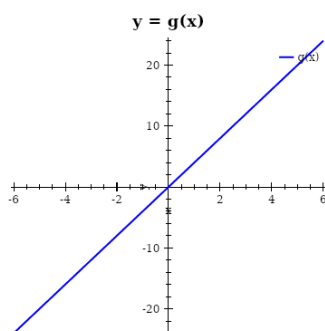
A $g(x) = -0.25f(x)$

B $g(x) = 0.25f(-x)$

C $g(x) = f(-0.25x)$

5

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



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

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

6

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

$$g(x) = -f(n \cdot x)$$
$$n > 1$$

A Reflect in X – Axis
Vertical compression : n

B Reflect in Y – Axis
Horizontal compression : n

C Reflect in X – Axis
Horizontal compression : n



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7

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

$$[5 \cdot a, 5 \cdot b]$$

A

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

B

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

8

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

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

A

Shift right : t

B

Shift left : t

9

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

$$(a + 3, b)$$

A

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

B

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

C

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

10

Which function applies this transformation to f ?

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

shift left by 3

A

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

B

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

11

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

$$(a - 5, 0.2 \cdot b)$$

A

$$g(x) = f(0.2x + 5)$$

B

$$g(x) = 0.2f(x - 5)$$

C

$$g(x) = 0.2f(x + 5)$$

12

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

$$[-b, -a]$$

A

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

B

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

13

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

Horizontal compression : t

A

$$g(x) = t \cdot f(x)$$
$$t < 1$$

B

$$g(x) = f(t \cdot x)$$
$$t < 1$$

C

$$g(x) = f(t \cdot x)$$
$$t > 1$$