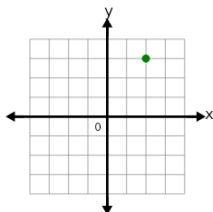




Identify horizontal translations of functions

1

Translate this point by (1,0)



A (3,3)

B (-3,3)

2

(4,-2)

A

(4,0)

B

(-4,-0)

3If the range of $f(x)$ is $[a,b]$, what is the range of $g(x)$?

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

A

 $[a, b]$

B

 $[3 \cdot a, 3 \cdot b]$ **4**If the vertex of $f(x)$ is (a,b) , what is the vertex of $g(x)$?

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

A

 $(a, b + 2)$

B

 $(a + 2, b)$

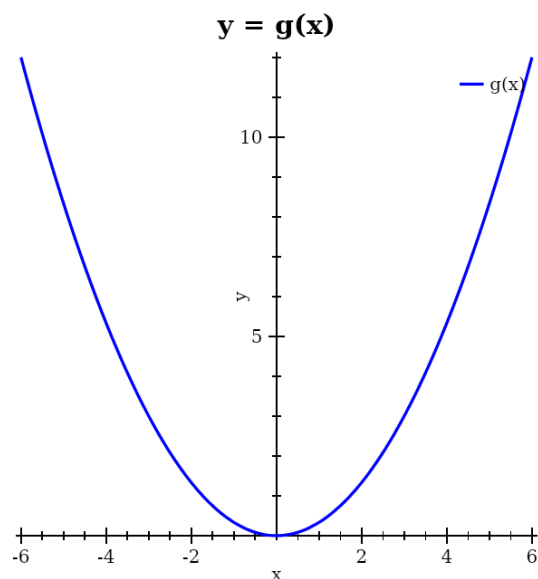
C

 $(a, b - 2)$ **5**Which graph shows the transformation of $f(x)$ into $g(x)$?

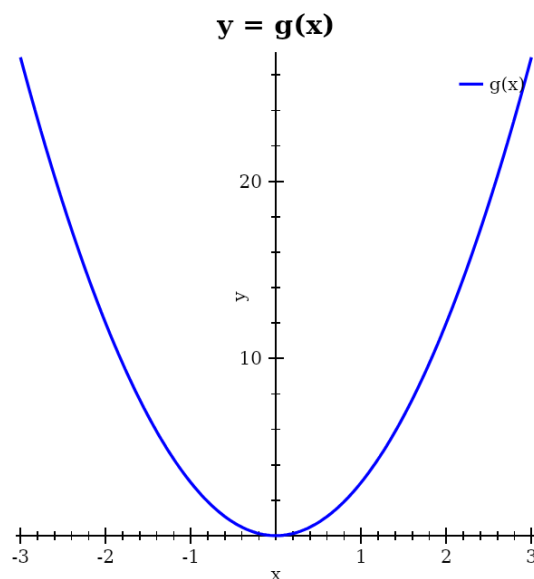
$$f(x) = x^2$$

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

A



B





Identify horizontal translations of functions

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

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

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

- A horizontally compress by a factor of 3 B vertically stretch by a factor of 3 C shift left by 3 D reflect over the x-axis

7Using the mapping notation, how does this variable value transform the graph of f ?

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

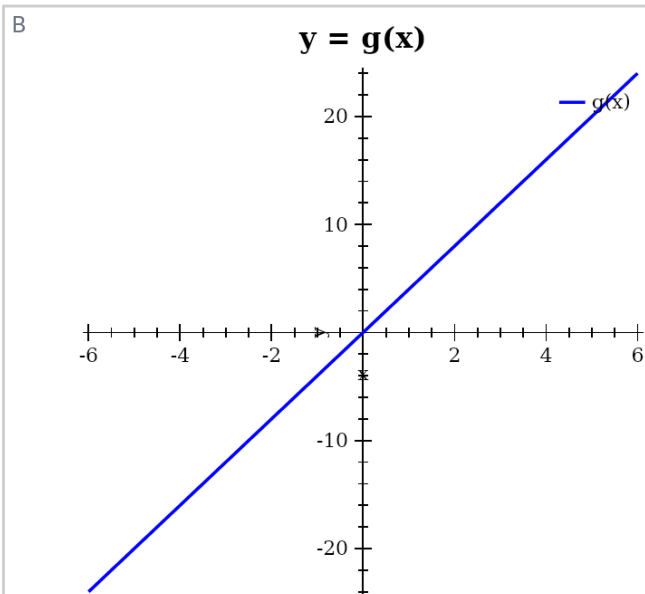
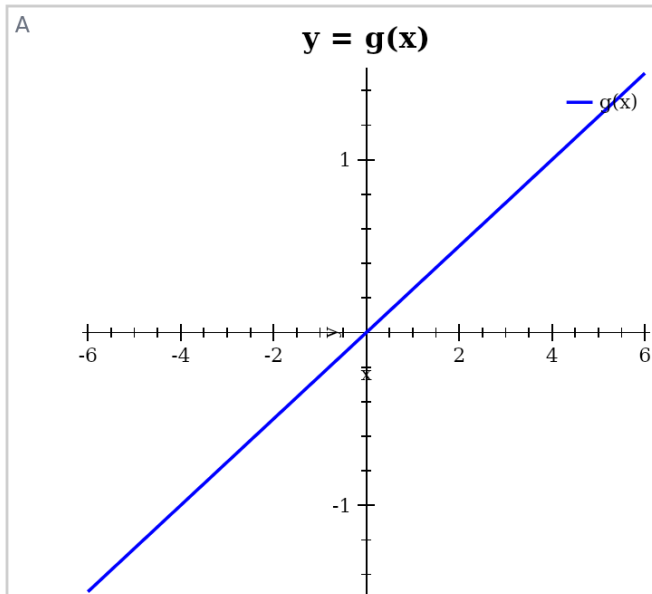
$$a = 4$$

- A vertically stretch by a factor of 4 B shift right by 4 C horizontally compress by a factor of 4 D shift up by 4

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

$$f(x) = x$$

Horizontal stretch : 0.25)

**9**Which function applies this transformation to f ?

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

vertically stretch by a factor of 4

- A $g(x) = f(x) + 4$
- B $g(x) = 4f(x)$

10Which function $g(x)$ shows this transformation of $f(x)$?

Shift left : 2

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

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