Select the correct answer.

Compare the domains of the graph of $f(x) = \frac{1}{x}$ and the graph of $g(x) = \frac{1}{\sqrt{x}}$.

ATTEMPT 1

- The domains of both graphs have only positive values.
- The domain of the graph of $f(x) = \frac{1}{x}$ has both positive and negative values while $g(x) = \frac{1}{\sqrt{x}}$ has only positive values. ✓
- The domain of the graph of $f(x) = \frac{1}{x}$ has only positive values while $g(x) = \frac{1}{\sqrt{x}}$ has both positive and negative values.
- The domains of both graphs have negative and positive values.

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Select the correct option.

If the graph of $f(x) = x^2$ is translated 2 units up and 2 unit right, what is the equation for the new function, $g(x)$?

ATTEMPT 1

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

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- ◉ $g(x) = x^2 - 4x + 6$ ✓
- $g(x) = x^2 - 4x - 6$

Which statements about the function $g(x) = -(x+3)^2$ are true? Select all that apply.

ATTEMPT 1

- [x] $f(x) = x^2$ is reflected in the x-axis. ✓
- [ ] As x approaches $-\infty$, $g(x)$ approaches $+\infty$.
- [ ] The range of $g(x)$ is $y < 0$.
- [ ] The range of $g(x)$ is $y \geq 0$.
- [x] $f(x) = x^2$ is translated 3 units down. ✗
- [x] The range of $g(x)$ is $y \leq 0$. ✓

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- [ ] As x approaches $+\infty$, $g(x)$ approaches $+\infty$.
- [x] $f(x) = x^2$ is reflected in the y-axis. ✗
- [ ] $f(x) = x^2$ is translated 3 units to the right.
- [x] As x approaches $+\infty$, $g(x)$ approaches $-\infty$. ✓
- [x] $f(x) = x^2$ is translated 3 units to the left. ✓
- [x] $f(x) = x^2$ is translated 3 units up. ✗

Choose the correct answer from the drop-down menu.

The function $f(x) = x^2 + 2$ is symmetrical with respect to the 1. *y*-axis ✓ .

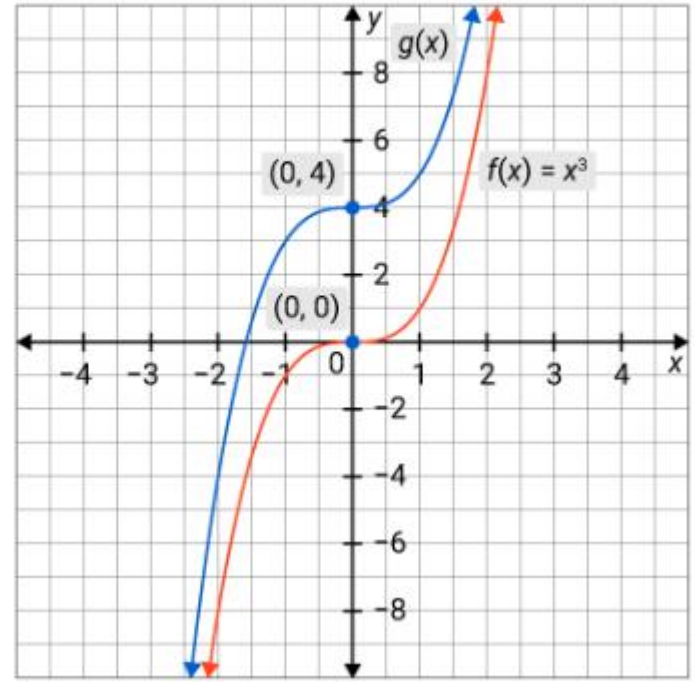
1. *y*-axis

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✓

Select the correct option.

How are the graphs of $f(x) = x^3$ and $g(x)$ related?



ATTEMPT 1

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- The graph of $g(x)$ is the graph of $f(x)$ translated 4 units right.
- The graph of $g(x)$ is the graph of $f(x)$ translated 4 units down.
- The graph of $g(x)$ is the graph of $f(x)$ translated 4 units left.
- **The graph of $g(x)$ is the graph of $f(x)$ translated 4 units upward.** ✓

Choose the correct answer.

Describe the symmetry of the function $f(x) = \frac{1}{x}$.

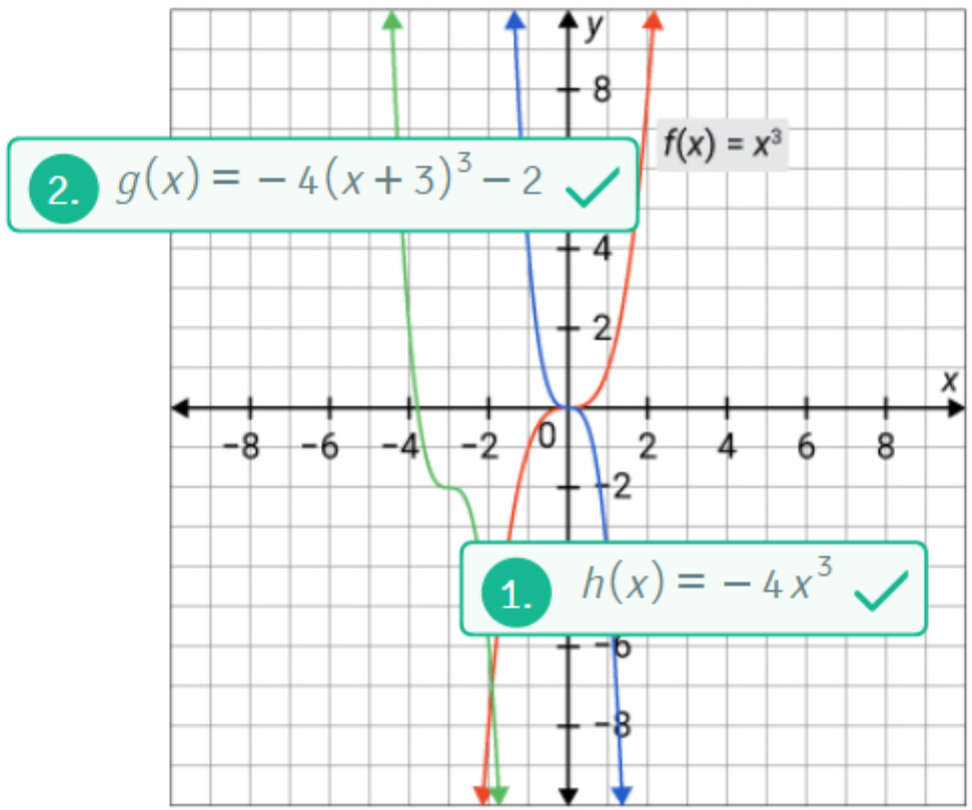
ATTEMPT 1

- (◉) symmetric with respect to the origin ✓
- ( ) no symmetry
- ( ) symmetric with respect to the x-axis
- ( ) symmetric with respect to the y-axis

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Drag and drop the correct answer into the space(s) provided.

Drag and drop each function that represents the transformations of the parent function $f(x) = x^3$.



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Select the correct answer.

The industrial process of forming hollow plastic spheres can be modeled by $g(x) = \frac{4}{3}\pi(x+3)^3 + 2$.

Describe the transformations of the parent function $f(x) = x^3$ used to graph $g(x)$.

ATTEMPT 1

- reflection across the x-axis, vertical compression, translation 3 units left and 2 units up
- reflection across the x-axis, vertical expansion, translation 3 units left and 2 units up

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- vertical expansion, translation 3 units right and 2 units up
- vertical expansion, translation 3 units left and 2 units up ✓

Drag and drop the correct answer into the space(s) provided.

The graph of $f(x) = x^2 - 2$ is

1. reflected across the x-axis ✓ to form $g(x)$ =
2. $-x^2 + 2$ ✓ .

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$x^2 - 4$

$-x^2 - 2$

translated 4 units down

reflected in the y-axis

