

1. (1 point) For the equation $-x^3 + 10y^6 = -5$ answer the following questions.

Is the equation symmetric with respect to the y -axis? (yes or no) _____

Is the equation symmetric with respect to the x -axis? (yes or no) _____

Is the equation symmetric with respect to the origin? (yes or no) _____

Answer(s) submitted:

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(incorrect)

2. (1 point) This problem gives you some practice identifying how more complicated functions can be built from simpler functions.

Let $f(x) = x^3 + 1$ and let $g(x) = x + 1$. Match the functions defined below with the letters labeling their equivalent expressions.

- ___1. $g(x^2)$
- ___2. $g(f(x))$
- ___3. $(g(x))^2$
- ___4. $(f(x))^2$

- A. $1 + 2x + x^2$
- B. $2 + x^3$
- C. $1 + x^2$
- D. $1 + 2x^3 + x^6$

Answer(s) submitted:

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(incorrect)

3. (1 point)

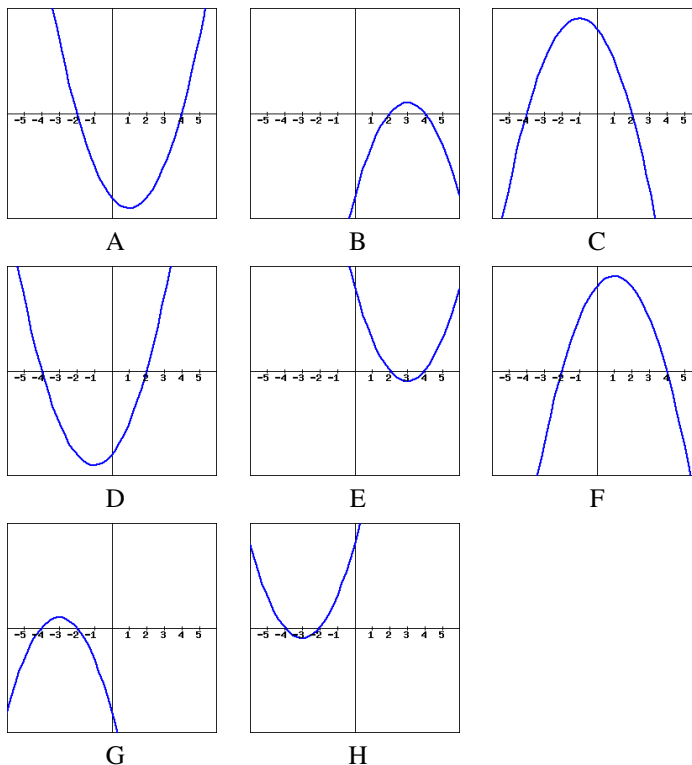
Match each equation with its graph.

$y = 2(x - 4)(x + 2)$

$y = 2(x + 2)(x + 4)$

$y = -2(x + 4)(x - 2)$

$y = 2(x - 2)(x + 4)$



(Click on a graph to enlarge it)

Answer(s) submitted:

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(incorrect)

4. (1 point) Suppose that

$$f(x) = \sqrt{x^2 - 5^2} \quad \text{and} \quad g(x) = \sqrt{5 - x}.$$

For each function h given below, find a formula for $h(x)$ and the domain of h . Use **interval notation** for entering each domain.

(A) $h(x) = (f \circ g)(x)$.

$h(x) =$ _____
 Domain = _____

(B) $h(x) = (g \circ f)(x)$.

$h(x) =$ _____
 Domain = _____

(C) $h(x) = (f \circ f)(x)$.

$h(x) =$ _____
Domain = _____

(D) $h(x) = (g \circ g)(x)$.

$h(x) =$ _____
Domain = _____

Answer(s) submitted:

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(incorrect)

5. (1 point) Find the inverse of $y = f(t) = \sqrt{(4t)} + 2$

$f^{-1}(y) =$ _____
Answer(s) submitted:

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(incorrect)

6. (1 point) Question 47:

Let $r(x) = \frac{2x-3}{9x+2}$. Find and simplify

$r^{-1}(x) =$ _____

Answer(s) submitted:

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(incorrect)

7. (1 point) Let $f(x) = 9x^3 - 14$. Find $f^{-1}(x)$.

$f^{-1}(x) =$ _____

Answer(s) submitted:

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(incorrect)

8. (1 point) Question 46:

Decompose the function below into $u(v(x))$. In each part, based on the function $v(x)$ given, find the corresponding $u(x)$ needed to decompose the function.

$$y = \frac{1+x^5}{8+x^5}$$

a) $v(x) = x^5$, $u(x) =$ _____

b) $v(x) = x^5 + 1$, $u(x) =$ _____

Answer(s) submitted:

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(incorrect)

9. (1 point) Question 52:

Let $f(x) = \sqrt{3-2x}$.

Which of the following decompositions of $f(x) = p(q(x))$ into a pair of functions $p(x)$ (the outside function) and $q(x)$ (the inside function) is/are correct? Select all that apply if more than one is appropriate.

- A. $p(x) = \sqrt{-2x}$ and $q(x) = 3+x$
- B. $p(x) = \sqrt{-x}$ and $q(x) = 2x-3$
- C. $p(x) = \sqrt{3+x}$ and $q(x) = 2x$
- D. $p(x) = 3-2x$ and $q(x) = \sqrt{x}$
- E. $p(x) = \sqrt{x}$ and $q(x) = 3-2x$
- F. $p(x) = \sqrt{3-x}$ and $q(x) = 2x$
- G. All of the above
- H. None of the above

Answer(s) submitted:

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(incorrect)

10. (1 point) Suppose that

$$f(x) = \sqrt{8x-2} \quad \text{and} \quad g(x) = 4x^2 - 6.$$

For each function h given below, find a formula for $h(x)$ and the domain of h . Enter the domains using **interval notation**.

(A) $h(x) = (f \circ g)(x)$.

$h(x) =$ _____

Domain = _____

(B) $h(x) = (g \circ f)(x)$.

$h(x) =$ _____

Domain = _____

(C) $h(x) = (f \circ f)(x)$.

$h(x) =$ _____

Domain = _____

(D) $h(x) = (g \circ g)(x)$.

$h(x) =$ _____

Domain = _____

Answer(s) submitted:

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(incorrect)