Calculus 1 Workbook

Modifying functions

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MATH

COMBINATIONS OF FUNCTIONS

1. Find $(f+g)(x)$.

$$f(x) = 2x^2 - x + 5$$

$$g(x) = x^2 + 4x - 7$$

2. Find $(f-g)(x)$.

$$f(x) = 4x^2 - 2$$

$$g(x) = 3x^2 - 5x$$

3. Find $(f-g)(x)$.

$$f(x) = x^2 - 3x + 1$$

$$g(x) = 2x - 3$$

4. Find $(f \cdot g)(x)$.

$$f(x) = 2x - 3$$

$$g(x) = 3x^2 + 2$$

5. Find $(f \cdot g)(x)$.

$f(x) = x - 3$

$g(x) = x + 4$

6. Find $(f \div g)(x)$.

$f(x) = x^2 + 6x$

$g(x) = x$

7. Find $(g \div f)(x)$.

$f(x) = x^2 + 6x$

$g(x) = x$

COMPOSITE FUNCTIONS

1. Find the composite function $(f \circ g)(x)$.

$$f(x) = \sqrt{2x - 1}$$

$$g(x) = 3x^2$$

2. Find the composite function $(g \circ f)(x)$.

$$f(x) = \sqrt{2x - 1}$$

$$g(x) = 3x^2$$

3. Find the composite function $f(g(x))$.

$$f(x) = x^2 - 4x + 3$$

$$g(x) = 2x + 1$$

4. Find the composite function $g(f(x))$.

$$f(x) = x^2 - 4x + 3$$

$$g(x) = 2x + 1$$

5. Find the composite function $(g \circ h)(x)$.

$$g(x) = \frac{8}{x^3}$$

$$h(x) = \sqrt[3]{x+4}$$

6. Find the composite function $(h \circ g)(x)$.

$$g(x) = \frac{8}{x^3}$$

$$h(x) = \sqrt[3]{x+4}$$

7. Find the composite function $g(h(x))$.

$$g(x) = \frac{1}{x}$$

$$h(x) = 3x^2 - x$$

8. Find the composite function $h(g(x))$.

$$g(x) = \frac{1}{x}$$

$$h(x) = 3x^2 - x$$

COMPOSITE FUNCTIONS, DOMAIN

1. What is the domain of $f \circ g$?

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

$$g(x) = \sqrt{x+3}$$

2. What is the domain of $f \circ g$?

$$f(x) = \frac{1}{x}$$

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

3. What is the domain of $f \circ g$?

$$f(x) = \frac{2}{x-1}$$

$$g(x) = \sqrt{x-4}$$

4. What is the domain of $f \circ g$?

$$f(x) = \frac{1}{x} + 4$$

$$g(x) = \frac{3}{2x - 7}$$

5. What is the domain of $f \circ g$?

$$f(x) = \frac{2}{x - 3}$$

$$g(x) = \frac{4}{x + 2}$$

6. What is the domain of $f \circ g$?

$$f(x) = \frac{1}{x^2 - 3}$$

$$g(x) = \sqrt{x - 1}$$

7. What is the domain of $f \circ g$?

$$f(x) = 2x^2 - x + 1$$

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

8. What is the domain of $f \circ g$?

$$f(x) = x^2 + 4x - 10$$

$g(x) = x + 6$

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