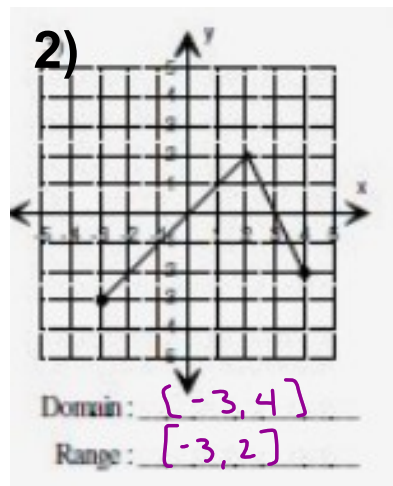
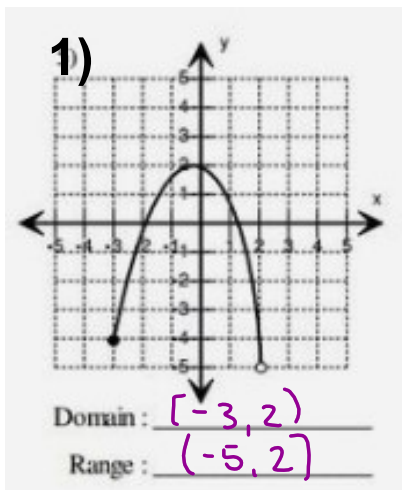


WARM UP

State the domain and range of each graph.



Jan 24-10:12 AM

7.6 Part 1 Combinations of Functions

We will be using these functions for the entire class.

$$f(x) = x^2 - 3x + 1 \quad g(x) = 5x - 7 \quad h(x) = -3x + 2$$

$$j(x) = -x^2 - 10x \quad k(x) = \frac{1}{2}x - \frac{3}{2}$$

WB pg. 66

Jan 8-10:53 AM

Functions can be combined using the 4 operations of arithmetic

addition

subtraction

multiplication

division

Jan 8-10:58 AM

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

$$g(x) = 5x - 7$$

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

$$j(x) = -x^2 - 10x$$

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

ADDITION

$$\text{Find } g(x) + j(x) = (g+j)(x) \quad -x^2 - 5x - 7$$

$$(5x-7) + (-x^2-10x)$$

$$5x-7-x^2-10x$$

$$(f+h)(x) = f(x) + h(x) \quad x^2 - 6x + 3$$

$$x^2 - 3x + 1 - 3x + 2$$

Feb 3-12:45 PM

$f(x) = x^2 - 3x + 1$	$g(x) = 5x - 7$	$h(x) = -3x + 2$
$j(x) = -x^2 - 10x$		$k(x) = \frac{1}{2}x - \frac{3}{2}$

SUBTRACTION

Find $f(x) - j(x)$

$$(x^2 - 3x + 1) - (-x^2 - 10x)$$

$$x^2 - 3x + 1 + x^2 + 10x$$

$$2x^2 + 7x + 1$$

$(j - h)(x)$

$$j(x) - h(x)$$

$$(-x^2 - 10x) - (-3x + 2)$$

$$-x^2 - 10x + 3x - 2$$

$$-x^2 - 7x - 2$$

Feb 3-12:45 PM

$f(x) = x^2 - 3x + 1$	$g(x) = 5x - 7$	$h(x) = -3x + 2$
$j(x) = -x^2 - 10x$		$k(x) = \frac{1}{2}x - \frac{3}{2}$

MULTIPLICATION

Find: $g(x) \cdot h(x) = gh(x)$

$$(5x - 7)(-3x + 2) \text{ foil}$$

$$-15x^2 + 10x + 21x - 14$$

$$-15x^2 + 31x - 14$$

$(h \cdot g)(x)$

Feb 4-5:46 AM

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

$g(x) = 5x - 7$

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

$j(x) = -x^2 - 10x$

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

DIVISION

Find and state the domain: $\frac{g(x)}{h(x)} = \frac{5x-7}{-3x+2}$ $\frac{5x-7}{-3x+2} \quad x \neq \frac{2}{3}$

$(f/g)(x) = \frac{5x-7}{-3x+2} \neq 0$ $\frac{x^2-3x+1}{5x-7} \quad x \neq \frac{7}{5}$

$(\frac{f}{g})(x)$ -3x+2=0
-3x+2
x+2/3

$\frac{x^2-3x+1}{5x-7}, x \neq \frac{7}{5}$

Feb 4-5:46 AM

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

$g(x) = 5x - 7$

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

$j(x) = -x^2 - 10x$

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

Evaluate the following: [Red Box]

pull problem for answer click on each box to fade out

$f(-3) = (-3)^2 - 3(-3) + 1$
 $= 9 + 9 + 1$
 $= 19$

$j(-4) = -(-4)^2 - 10(-4)$
 $= -16 + 40$
 $= 24$

[Red Box]

$h(-12) = 38$

[Red Box]

$k(7) = 2$

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

[Red Box]

Jan 8-4:19 PM

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

$$g(x) = 5x - 7$$

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

$$j(x) = -x^2 - 10x$$

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

Evaluating Combinations

Evaluate $(g + j)(1) = g(1) + j(1) = -2 - 11 = -13$
 $(-x^2 - 5x - 7)(1) = -(1)^2 - 5(1) - 7 = -13 \rightarrow -13$

Now try these: $(f - j)(3) \rightarrow 40$

$$f(3) - j(3) =$$

$$1 - (-39)$$

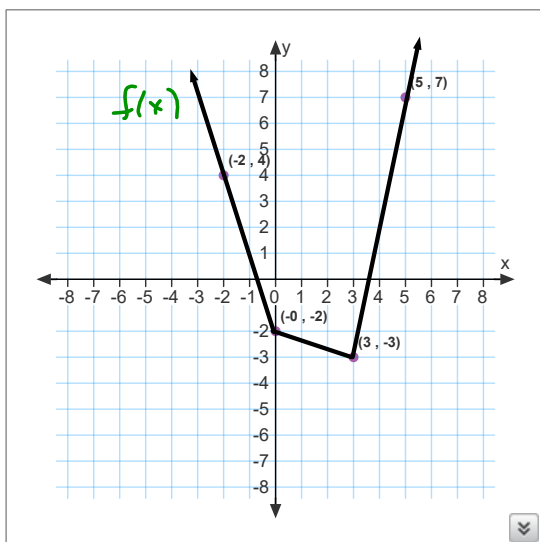
$$(hg)(0) \rightarrow -14$$

$$h(0)g(0)$$

$$(2)(-7)$$

Jan 8-11:01 AM

Use the graph of $f(x)$ to answer the questions.



$$f(3) = -3$$

$$f(5) = 7$$

$$f(0) - f(-2) =$$

$$-2 - (4) = -6$$

Aug 30-12:20 PM



GO COUGARS!

WS - attached in calendar - #1-18

HW - 7.6 Part 1|- #1-18 - Show ALL WORK on this worksheet or copy the problem in your notebook and show all work to receive full credit.

Let $f(x) = 3x + 5$ and $g(x) = x^2$. Perform each function operation.

- | | | |
|----------------------|-----------------------------------|-----------------------------------|
| 1. $f(x) + g(x)$ | 2. $g(x) - f(x)$ | 3. $f(x) - g(x)$ |
| 4. $f(x) \cdot g(x)$ | 5. $\frac{f(x)}{g(x)}$ | 6. $\frac{g(x)}{f(x)}$ |
| 7. $(f + g)(x)$ | 8. $(f - g)(x)$ | 9. $(g - f)(x)$ |
| 10. $(f \cdot g)(x)$ | 11. $\left(\frac{f}{g}\right)(x)$ | 12. $\left(\frac{g}{f}\right)(x)$ |

Let $f(x) = 2x^2 + x - 3$ and $g(x) = x - 1$. Perform each function operation and then find the domain.

- | | | |
|-----------------------|-------------------------|-------------------------|
| 13. $f(x) + g(x)$ | 14. $g(x) - f(x)$ | 15. $f(x) - g(x)$ |
| 16. $f(x) \cdot g(x)$ | 17. $\frac{f(x)}{g(x)}$ | 18. $\frac{g(x)}{f(x)}$ |

Jan 24-11:02 AM