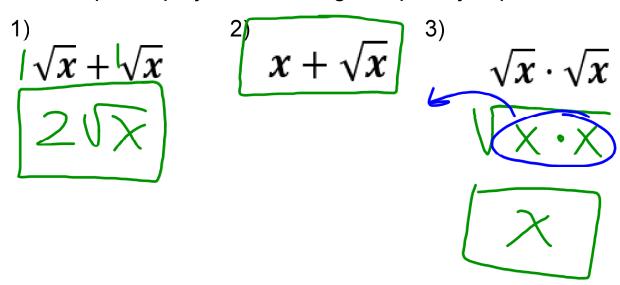
Guiding Question:

Can I add, subtract, and multiply functions?

p. 20-21 Function Operations 6.6
p. 20

Warm-up: Simplify the following completely, if possible



Mathematical Operations

p .21

The function operations we will focus on in this section are Addition, Subtraction and Multiplication

Operation	Function Notation		
Addition	(f+g)(x)	means	f(x) + g(x)
Subtraction	(f-g)(x)	means	f(x) - g(x)
Multiplication	$(f \cdot g)(x)$	means	$f(x) \cdot q(x)$

Practice: perform the indicated operations using the given functions.

$$f(x) = \sqrt{x} + 9$$

and

$$g(x) = \sqrt{x} + 2$$

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

 $f(x)+g(x)$
 $(\sqrt{x}+9)+(\sqrt{x}+2)$
 $1\sqrt{x}+9+\sqrt{x}+2$
 $2\sqrt{x}+9-\sqrt{x}-2$
 $2\sqrt{x}+11$
2. $(f-g)(x)$
 $f(x)-g(x)$
 $(\sqrt{x}+9)-(\sqrt{x}+2)$
 $(\sqrt{x}+9)-(\sqrt{x}+2)$
 $(\sqrt{x}+9)-(\sqrt{x}+2)$

Practice: perform the indicated operations using the given functions.

$$f(x) = \sqrt{x} + 9$$

and
$$g(x) = \sqrt{x} + 2$$

3.
$$(f \cdot g)(x)$$

$$f(x) \cdot g(x)$$

$$(\sqrt{x} + q)(\sqrt{x} + 2\sqrt{x} + 2\sqrt{x} + 4\sqrt{x} + 18)$$

$$(x + 1)(\sqrt{x} + 18)$$

You try: perform the indicated operations using the given functions.

$$f(x) = \sqrt{x} + 4$$
 and $g(x) = \sqrt{x} + 5$

4.
$$(f+g)(x)$$

5. $(f-g)(x)$

$$(\sqrt{x}+4)+(\sqrt{x}+5)$$

$$(\sqrt{x}+4)-(\sqrt{x}+5)$$

$$\sqrt{x}+4-(\sqrt{x}-5)$$

$$(-1)$$

You try: perform the indicated operations using the given functions.

$$f(x) = \sqrt{x} + 4$$
 and $g(x) = \sqrt{x} + 5$

6.
$$(f \cdot g)(x)$$

$$f(x) \cdot g(x)$$

$$(\sqrt{x} + 4) \cdot (\sqrt{x} + 5)$$

$$\sqrt{x} \cdot \sqrt{x} + 5\sqrt{x} + 4\sqrt{x} + 20$$

$$(x + 9\sqrt{x} + 20)$$

Guiding Question:

Can I add, subtract, and multiply functions?

Homework - Worksheet

Test is on Thursday!