

Operations on Functions 12-4-13

For these problems, use the following functions. *Look at Letters and use that equation!*

$f(x) = 3x + 4$	$g(x) = 4x^2 + 2x$
$h(x) = 5x - 1$	$j(x) = (x+1)^2$

Put together Like Terms

- $(f + g)(x) = (3x+4) + (4x^2+2x) = 4x^2+5x+4$
- $(g - h)(x) = (4x^2+2x) - (5x-1)$
 $(4x^2+2x) + (-5x+1) = 4x^2-3x+1$ *Add opposite*
- $(h + h)(x) = (5x-1) + (5x-1) = 10x-2$
- $(j)(x) = \frac{5x-1}{(x+1)^2}$ *(cannot reduce)*
- $(hg)(x) = (5x-1)(4x^2+2x)$
 $20x^3 + 10x^2 - 4x^2 - 2x$
 $20x^3 + 6x^2 - 2x$

Mar 7-8:33 AM

Review:

If $f(x) = 2x - 5$, find...

$$f(2) = 2(2) - 5 = 4 - 5 = -1$$

$$f(-3) = 2(-3) - 5 = -6 - 5 = -11$$

If $f(x) = 3x + 4$ and $g(x) = 2x - 5$, which expression is equivalent to $(f - g)(3)$?

$$(f - g)(3)$$

$$f(3) - g(3)$$

$$f(3) = 3(3) + 4 = \underline{13} \quad g(3) = 2(3) - 5 = \underline{1}$$

$$13 - 1$$

$$\textcircled{12}$$

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If $f(x) = 3x + 4$ and $g(x) = 2x - 5$, which expression is equivalent to $(f \cdot g)(-1)$?

$$(f \cdot g)(-1)$$

$$f(-1) \cdot g(-1)$$

$$f(-1) = 3(-1) + 4 = \textcircled{1} \quad g(-1) = 2(-1) - 5 = \textcircled{-7}$$

$$1 \cdot -7$$

$$\textcircled{-7}$$

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If $f(x) = 3x^2 + 4$ and $g(x) = 2x - 5$, which expression is equivalent to $(f + g)(4)$?

$$(f + g)(4)$$

$$f(4) + g(4)$$

Calculator

$$f(4) = 3(4)^2 + 4 = 52$$

$$g(4) = 2(4) - 5 = 3$$

$$52 + 3$$

$$55$$

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If $f(x) = x - 5$ and $g(x) = 3x^2$, which expression is equivalent to $(f/g)(2)$?

$$\left(\frac{f}{g}\right)(2)$$

$$\frac{f(2)}{g(2)} \quad f(2) = 2 - 5 = -3$$

$$g(2) = 3(2)^2 = 12$$

$$\frac{-3}{12} \text{ reduce } \boxed{-\frac{1}{4}}$$

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Conclusion

1. How do we add or subtract functions?

Put together Like Terms

2. How do we add, subtract, multiply, or divide functions given the value of x ?

Put value into function then $+$, $-$, \times , or \div
Answers.

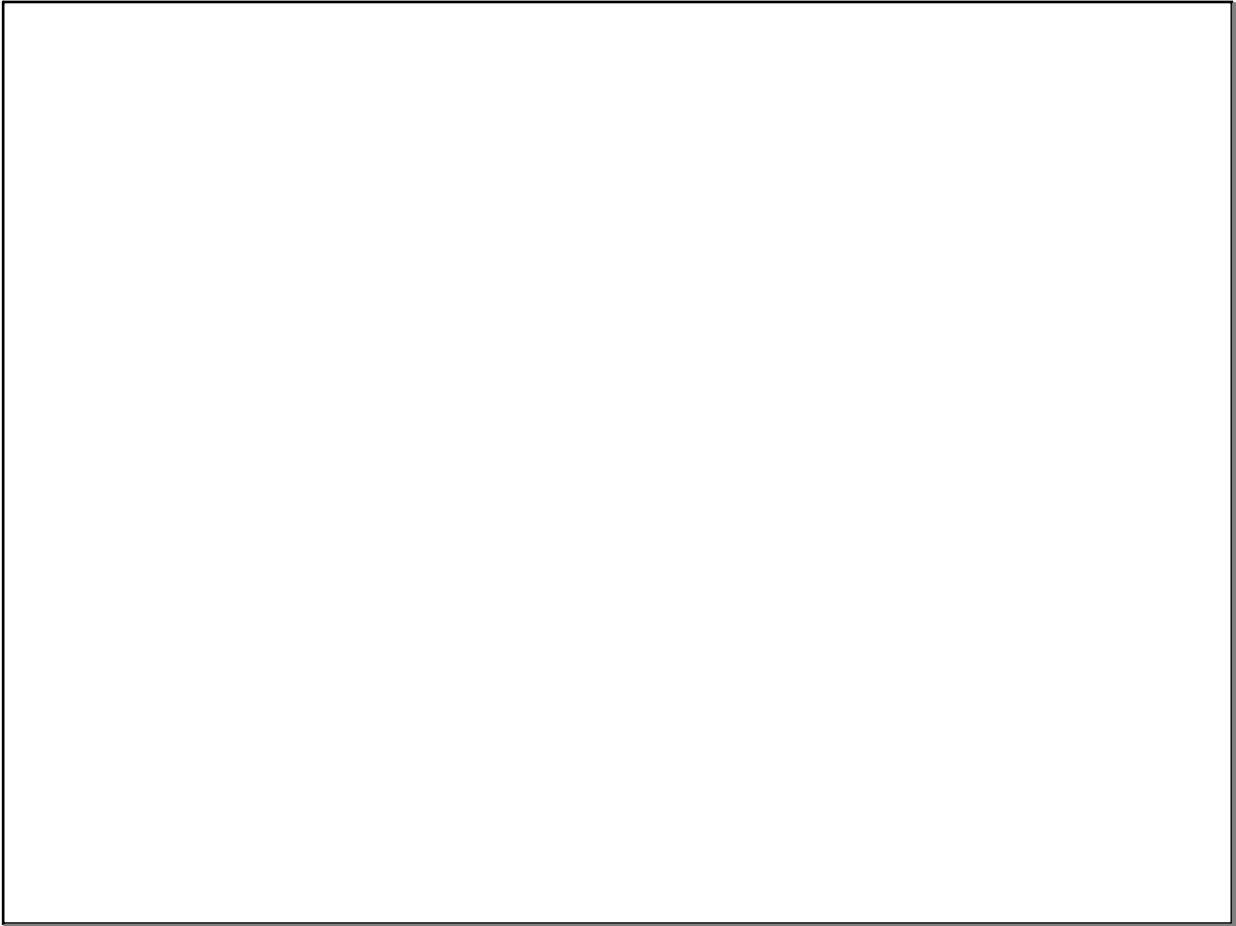
3. Any ???????????????s

Nov 24-1:45 PM

Assignment:

Operations of Functions Wkst

Mar 7-8:39 AM



Dec 11-12:49 PM