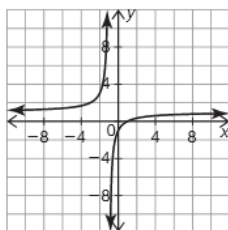


LESSON 3.6 Assignment

Name _____ Date _____

Closing Time
The Closure Property

- Ralph builds a function by performing one of the 4 basic operations (addition, subtraction, multiplication, or division) on 2 polynomial functions. The graph of the resulting function is shown. Which of the 4 basic operations could Ralph have used on the 2 polynomial functions to build his function? Explain your reasoning.

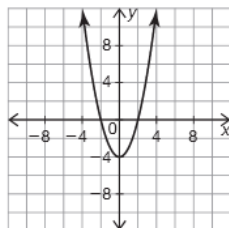

3

- Write 2 polynomial functions $f(x)$ and $g(x)$ such that $h(x) = \frac{f(x)}{g(x)}$ and such that $h(x)$ is a polynomial function. Does your solution prove that polynomial functions are closed under division? Explain your reasoning.

LESSON 3.6 Assignment

page 2

3. Tamika builds a function by performing one of the 4 basic operations (addition, subtraction, multiplication, or division) on 2 polynomial functions. The graph of the resulting quadratic function is shown. Which of the 4 basic operations could Tamika have used on the 2 polynomial functions to build her function? Explain your reasoning.



3

4. Let $t(x) = f(x) \cdot g(x) - h(x)$, where $f(x)$ is a quadratic function, $g(x)$ is a cubic function, and $h(x)$ is a quintic function. Is $t(x)$ a polynomial function? Explain your reasoning.
5. Provide a counterexample which proves that polynomial functions are not closed under division. Explain how to verify your answer graphically.

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