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Additional Practice Problem Set

Unit 2 Lesson 22 Additional Practice Problems

1. Identify all values of x that make the equation true.

   a. $\frac{x+4}{3} = \frac{x-2}{5}$

   b. $\frac{x+5}{x+1} = \frac{1-x}{x+3}$

   c. $\frac{x+3}{x+5} = \frac{1}{x+3}$

   d. $\frac{x-2}{3} = \frac{2}{3x-2}$

2. Elena is solving $\frac{5x-6}{x(x-3)} = \frac{4}{x}$ for x, and he uses these steps:

$$\frac{5x-6}{x(x-3)} = \frac{4}{x}$$

$$x(x-3)\left(\frac{5x-6}{x(x-3)}\right) = x(x-3)\left(\frac{4}{x}\right)$$

$$5x-6 = 4x$$

$$x = 6$$

   Elena finds that there is one solution, $x = 6$. Unfortunately, she made a mistake while solving. Find her error and calculate the actual solution(s).

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3. Identify all values of x that make the equation true.

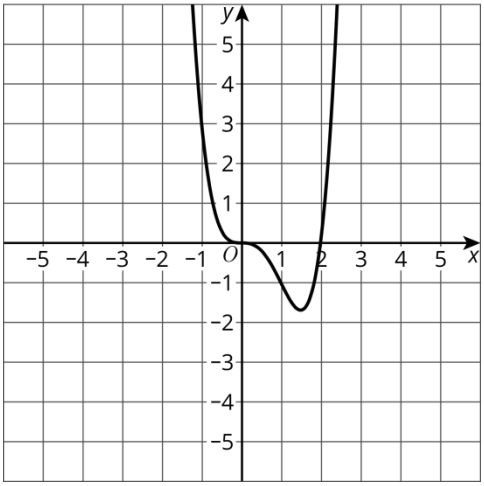
   a. $\frac{1}{x} = \frac{x}{121}$

   b. $\frac{6}{x} = \frac{x}{x^2}$

   c. $x - 3 = \frac{2x-6}{x}$

   d. $\frac{3x(x+2)}{4x^3} = \frac{2}{x}$

4. Is this the graph of $g(x) = -x^3(x-2)$ or $h(x) = x^3(x-2)$? Explain how you know.



(From Unit 2, Lesson 10.)

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5. Rewrite the rational function $g(x) = \frac{2x+13}{x}$ in the form $g(x) = c + \frac{r}{x}$, where c and r are constants.

(From Unit 2, Lesson 18.)

6. Noah paddles his kayak at a constant rate of 4 miles per hour in still water. He travels upstream for a certain distance and then back downstream to where he initially started. Noah notices that it takes him 2.5 hours to travel downstream and 3 hours to travel upstream. The river's speed is r miles per hour. Write an equation that will help him solve for r.

(From Unit 2, Lesson 21.)

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