UNIT 5 • RATIONAL FUNCTIONS

Activity 5.1: Rational Expressions & Equations

A

Name: _____ Partner's name: _____ Date: _____

Directions: Simplify or solve. State any restrictions you need.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

Simplify: $\dfrac{x^2-9}{x^2-x-6}$

Answer: _____ Match? ☐ Yes ☐ No

2

Multiply: $\dfrac{3x}{x+2} \cdot \dfrac{x+2}{3x^2}$

Answer: _____ Match? ☐ Yes ☐ No

3

Divide: $\dfrac{x^2-4}{x} \div \dfrac{x-2}{x^2}$

Answer: _____ Match? ☐ Yes ☐ No

4

Add: $\dfrac{3}{x} + \dfrac{2}{x-1}$

Answer: _____ Match? ☐ Yes ☐ No

5

Solve: $\dfrac{3}{x} = \dfrac{2}{x-1}$

Answer: _____ Match? ☐ Yes ☐ No

6

Solve: $\dfrac{x}{x-3} = \dfrac{3}{x-3}$

Answer: _____ Match? ☐ Yes ☐ No

7

One pipe fills a tank in 6 hours and another fills it in 3 hours. How long do they take working together?

Answer: _____ Match? ☐ Yes ☐ No

8

y varies inversely with x, and $y = 6$ when $x = 4$. Find y when $x = 3$.

Answer: _____ Match? ☐ Yes ☐ No

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Activity 5.1: Rational Expressions & Equations

B

Name: _____ Partner's name: _____ Date: _____

Directions: Simplify or solve. State any restrictions you need.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

Simplify: $\dfrac{x^2+x-6}{x^2-4}$

Answer: _____ Match? ☐ Yes ☐ No

2

Multiply: $\dfrac{x-1}{x^2} \cdot \dfrac{x}{x-1}$

Answer: _____ Match? ☐ Yes ☐ No

3

Divide: $\dfrac{x+2}{3} \div \dfrac{1}{3x}$

Answer: _____ Match? ☐ Yes ☐ No

4

Add: $\dfrac{6}{2x} + \dfrac{4}{2x-2}$

Answer: _____ Match? ☐ Yes ☐ No

5

Solve: $\dfrac{4}{x+1} = \dfrac{3}{x}$

Answer: _____ Match? ☐ Yes ☐ No

6

Solve: $\dfrac{x+1}{x-3} = \dfrac{4}{x-3}$

Answer: _____ Match? ☐ Yes ☐ No

7

Two identical machines each take 4 hours to finish a job alone. How long do they take working together?

Answer: _____ Match? ☐ Yes ☐ No

8

y varies inversely with x, and $y = 2$ when $x = 12$. Find y when $x = 3$.

Answer: _____ Match? ☐ Yes ☐ No