12 Chapter Review

Connect the Dots

Imagine that you have just won the vacation of a lifetime in a raffle. Complete this puzzle to find out how you will be traveling to your destination. First simplify each expression completely. Then connect the dots following the instructions in the box at the right.

1. $\dfrac{9x^2}{3xy}$

2. $\dfrac{x^2 + 5x}{3x + 15}$

3. $\dfrac{x - 2}{2} \cdot \dfrac{x + 4}{x^2 - 4}$

4. $\dfrac{x^2 - x}{x^2 - 1} \div \dfrac{x}{x + 1}$

5. $(x^3 + 5x^2 + 5x - 3) \div (x + 3)$

6. $\dfrac{18}{3 - x} - \dfrac{6x}{3 - x}$

7. $\dfrac{1}{5x} - \dfrac{3}{7x}$

8. $\dfrac{x^2 + 3x}{x + 3} + \dfrac{1}{x - 3}$

Connect the answers to each problem in the following order:

Connect #1 to #2.
Connect #3 to #4.
Connect #5 to #6.
Connect #2 to #7.
Connect #5 to #3.
Connect #7 to #8.
Connect #4 to #6.

$\dfrac{-8}{35x}$ •

$\dfrac{3}{x}$ •

• $\dfrac{x^2}{x^2 + 2x + 1}$

$\dfrac{x + 5}{3}$ •

• $\dfrac{x - 2}{2}$

• $\dfrac{22}{35x}$

• $\dfrac{x^2 + 3}{x^2 - 9}$

• $\dfrac{-2}{35x}$

$\dfrac{x - 2}{2x - 8}$ •

• x

• $\dfrac{x^2 + 2x - 8}{2x^2 - 8}$

$\dfrac{3x}{xy}$ •

$\dfrac{3x}{y}$ •

• $\dfrac{x}{3}$

$\dfrac{x + 4}{2x + 4}$ •

• $\dfrac{x^2 - 3x + 1}{x - 3}$

• 1

• $x^2 + 2x + 1$

• $\dfrac{x}{3y}$

• $x^2 - 2x + 1$

• $x^2 + 2x - 1$

• 6

• $x^2 - 2x - 1$

Answers are located in the Answer Key.