

Name: _____

Date: _____

UNIT 3 • RATIONAL AND RADICAL RELATIONSHIPS

Unit Assessment

Assessment

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Circle the letter of the best answer.

1. Which simplified rational expression is equivalent to $\frac{5x+1}{3x} - \frac{x-2}{x^2}$?

a. $\frac{4x-x-1}{-x^2+3x}$

c. $\frac{5x^2-2x+6}{-x^2+3x}$

b. $\frac{5x^2-2x+6}{3x^3}$

d. $\frac{5x^2-2x+6}{3x^2}$

2. Which simplified rational expression is equivalent to $\frac{x}{x+1} \cdot \frac{5x}{2x-1}$?

a. $\frac{5x^2}{2x-1}$

c. $\frac{5x^2}{2x^2+x-1}$

b. $\frac{5x}{2x+1}$

d. $\frac{5x}{2x^2+x+2}$

3. Which simplified rational expression is equivalent to $\frac{x^2-9}{x+1} \div \frac{x+3}{x}$?

a. $\frac{x^3+3x^2-9x-27}{x^2+x}$

c. $\frac{x^2-9}{4x+4}$

b. $\frac{x^3-x^2-13x-3}{-x^2+x}$

d. $\frac{x^2-3x}{x+1}$

4. What is the solution to the equation $\frac{1}{8} - \frac{3}{4x} = -\frac{1}{x}$?

a. $x = -2$

c. $x = 2$

b. $x = 1$

d. $x = 14$

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5. What is the solution to the equation $\sqrt{x}+3=12$?

a. $x=3$

c. $x=9$

b. $x=141$

d. $x=81$

6. What is the solution to the equation $\sqrt{x}+2=9$?

a. $x=121$

c. $x=77$

b. $x=79$

d. $x=49$

7. What is the solution to the equation $\frac{x}{3} - \frac{x+2}{4} = 1$?

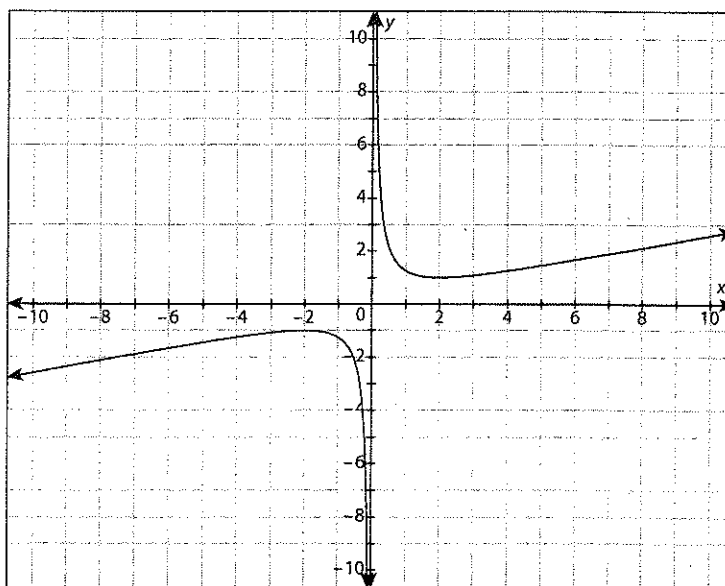
a. $x = -\frac{1}{2}$

c. $x = -1$

b. $x=18$

d. $x=7$

8. Which function does the graph represent?



a. $g(x) = \frac{4-x^2}{4-x}$

c. $g(x) = \frac{x^2-4}{4x}$

b. $g(x) = \frac{x^2+4}{4x}$

d. $g(x) = \frac{4x^2-1}{x+4}$

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9. Which simplified rational expression is equivalent to $\frac{4}{3+x} + \frac{2}{x-5}$?

a. $\frac{6x-14}{x^2-2x-15}$

c. $\frac{6}{x^2-2x-15}$

b. $\frac{6x+26}{x^2+8x+15}$

d. $\frac{6x+14}{x^2-2x-15}$

10. Which simplified rational expression is equivalent to $\frac{x}{x+1} \cdot 3x$?

a. $3x$

c. $\frac{3}{2x+1}$

b. $\frac{3x^2}{x^2+2x+1}$

d. $\frac{3x^2}{x+1}$

11. What is the solution to $\sqrt{2x}-4=7$?

a. $x = 60.5$

b. $x = -30.5$

c. $x = 5$ and $x = 60$

d. $x = 0$ and $x = 15$

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12. What is the graph of $y = \sqrt{x+4} - 1$?

