

**Rational Expressions and Equations Test****Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Which value of  $x$  makes the expression  $\frac{x+4}{x-3}$  undefined?
- 4
  - 3
  - 3
  - 0

- \_\_\_\_\_ 2. The expression  $\frac{9x^4 - 27x^5}{3x^3}$  is equivalent to
- $3x(1-3x)$
  - $3x(1-3x^2)$
  - $3x(1-9x^5)$
  - $9x^3(1-x)$

- \_\_\_\_\_ 3. Which expression represents  $\frac{2x^2 - 12x}{x-6}$  in simplest form?
- 0
  - $2x$
  - $4x$
  - $2x+2$

- \_\_\_\_\_ 4. What is the sum of  $\frac{3}{2x}$  and  $\frac{4}{3x}$  expressed in simplest form?
- |                      |                     |
|----------------------|---------------------|
| a. $\frac{12}{6x^2}$ | c. $\frac{7}{5x}$   |
| b. $\frac{17}{6x}$   | d. $\frac{17}{12x}$ |

- \_\_\_\_\_ 5. What is the sum of  $\frac{3x^2}{x-2}$  and  $\frac{x^2}{x-2}$ ?
- |                           |                           |
|---------------------------|---------------------------|
| a. $\frac{3x^4}{(x-2)^2}$ | c. $\frac{4x^2}{(x-2)^2}$ |
| b. $\frac{3x^4}{x-2}$     | d. $\frac{4x^2}{x-2}$     |

\_\_\_\_\_ 6. What is the product of  $\frac{4x}{x-1}$  and  $\frac{x^2-1}{3x+3}$  expressed in simplest form?

a.  $\frac{4x}{3}$

c.  $\frac{4x^2}{3(x+1)}$

b.  $\frac{4x^2}{3}$

d.  $\frac{4(x+1)}{3}$

\_\_\_\_\_ 7. What is the quotient of  $\frac{x}{x+4}$  divided by  $\frac{2x}{x^2-16}$ ?

a.  $\frac{2}{x-4}$

c.  $\frac{2x^2}{x^2-16}$

b.  $\frac{2x^2}{x-4}$

d.  $\frac{x-4}{2}$

\_\_\_\_\_ 8. Which value of  $x$  is a solution of  $\frac{5}{x} = \frac{x+13}{6}$ ?

a. -2

b. -3

c. -10

d. -15

\_\_\_\_\_ 9. What is the value of  $x$  in the equation  $\frac{2}{x} - 3 = \frac{26}{x}$ ?

a. -8

b.  $-\frac{1}{8}$

c.  $\frac{1}{8}$

d. 8

\_\_\_\_\_ 10. What is the solution set of  $\frac{x+2}{x-2} = \frac{-3}{x}$ ?

a.  $\{-2, 3\}$

b.  $\{-3, -2\}$

c.  $\{-1, 6\}$

d.  $\{-6, 1\}$

Name: \_\_\_\_\_

ID: A

Short Answer

11. Express in simplest form:  $\frac{2x^2 - 8x - 42}{6x^2} \div \frac{x^2 - 9}{x^2 - 3x}$

Answer: \_\_\_\_\_

BONUS

12. Solve for x:  $\frac{x+1}{x} = \frac{-7}{x-12}$

Answer: \_\_\_\_\_

Name: \_\_\_\_\_

ID: A

13. Solve algebraically for  $x$ :  $\frac{1}{2x} - \frac{x+11}{4x} = \frac{3}{4}$

Answer: \_\_\_\_\_

**BONUS**

14. Simplify  $\frac{x+2}{4x-8} \cdot \frac{3x-9}{x+4} \cdot \frac{2x-4}{x^2-x-6}$ .

Answer: \_\_\_\_\_