

Name: _____

Date Started: _____ Date Completed: _____ Score: _____

Learning Activity Sheet

Multiplication and Division of Rational Algebraic Expressions

A. Choose the letter of the correct answer.

1. $\frac{b}{12} \cdot \frac{40}{b}$

a. $\frac{3}{10}$

b. $\frac{10}{3}$

c. $\frac{10}{3d}$

d. $\frac{10}{3d^2}$

2. $\frac{8}{x+2} \cdot \frac{6+x-x^2}{4x+8}$

a. $\frac{2(2+x)(3-x)}{(x+2)^2}$

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

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

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

3. $\frac{y^2+y-12}{y^2+3y-4} \div \frac{y^2-y-6}{y^2-5y-6}$

a. $\frac{y-3}{y-1}$

b. $-\frac{y-3}{y-1}$

c. $\frac{(y+1)(y-6)}{(y-1)(y+2)}$

d. $\frac{(y+2)(y-3)}{(y-1)(y+2)}$

4. $\frac{a^2-11a+30}{8+2a-a^2} \div \frac{2a^2-9a-5}{2a^2-7a-4}$

a. $\frac{6+a}{2+a}$

b. $\frac{2-a}{6+a}$

c. $\frac{6-a}{2+a}$

d. $\frac{1-a}{2+a}$

B. Solve the following rational algebraic expressions.

Multiply and simplify:

1. $\frac{7}{x^4} \cdot \frac{x^5}{21}$

2. $\frac{a+4}{a^2+7a+10} + \frac{a^2+6a+5}{a^2+5a+4}$

$$3. \frac{2x}{4y^2+16y+16} \cdot \frac{2y+4}{4x^2}$$

Divide and simplify each:

$$4. \frac{2x^5}{7} \sqrt{10x^2}$$

$$5. \frac{25-x^2}{x^2+3x} \div \frac{x-5}{x^2-9}$$

$$6. \frac{81-x^2}{x^2+2x} \div \frac{x-3}{x^2-9}$$