

Name: Key

Unit 10: Rational Expressions



Date: _____ Bell: _____

Homework 3: Dividing Rational Expressions

Directions: Find each quotient. Final answers must be simplified.

1. $\frac{12ab}{a^2b^2} \div \frac{3b}{2a}$
 $\frac{12ab}{a^2b^2} \cdot \frac{2a}{3b} = \frac{2a}{b^2}$

2. $\frac{3xy^2}{8} \div 6xy$
 $\frac{3xy^2}{8} \cdot \frac{1}{6xy} = \frac{y}{16}$

3. $\frac{10c^2d}{3a^2b^2} \div \frac{5c^2d^2}{9ab}$
 $\frac{10c^2d}{3a^2b^2} \cdot \frac{9ab}{5c^2d^2} = \frac{6}{abd}$

4. $\frac{2n-4}{2n} \div \frac{n^2-4}{n}$
 $\frac{2(n-2)}{2n} \cdot \frac{n}{(n+2)(n-2)} = \frac{1}{n+2}$

5. $\frac{y^2-36}{y^2-49} \div \frac{y+6}{y-7}$
 $\frac{(y+6)(y-6)}{(y+7)(y-7)} \cdot \frac{y-7}{y+6} = \frac{y-6}{y+7}$

6. $\frac{m^2-1}{m^2-m} \div \frac{m^2-7m-8}{3m}$
 $\frac{(m+1)(m-1)}{m(m-1)} \cdot \frac{3m}{(m-8)(m+1)} = \frac{3}{m-8}$

7. $\frac{x^2+6x+8}{x^2+4x+4} \div \frac{x+4}{x+2}$
 $\frac{(x+2)(x+4)}{(x+2)(x+2)} \cdot \frac{x+2}{x+4} = 1$

8. $\frac{x^2-5x+6}{5} \div \frac{x-3}{15}$
 $\frac{(x-2)(x-3)}{5} \cdot \frac{15}{x-3} = 3x-6$

9. $\frac{n^2-5n+6}{8n^2+24n} \div \frac{n-2}{4n+12}$
 $\frac{(n-2)(n-3)}{2n(n+3)} \cdot \frac{4(n+3)}{n-2} = \frac{n-3}{2n}$

10. $\frac{p^2-2p+1}{p+1} \div \frac{p^2-1}{p+1}$
 $\frac{(p-1)(p-1)}{p+1} \cdot \frac{p+1}{(p+1)(p-1)} = \frac{p-1}{p+1}$

11. $\frac{a^2+7a+12}{a^2+3a-10} \div \frac{a^2-a-20}{a^2-25}$
 $\frac{(a+4)(a+3)}{(a+5)(a-2)} \cdot \frac{(a+5)(a-5)}{(a-5)(a+4)} = \frac{a+3}{a-2}$

12. $\frac{w^2-9}{2w^2+13w-7} \div \frac{2w^2+7w+3}{4w^2-1}$
 $\frac{(w+3)(w-3)}{(w+7)(2w-1)} \cdot \frac{(2w+1)(2w+1)}{(2w+1)(w+3)} = \frac{w-3}{w+7}$

13. $\frac{y^2+5y-14}{9y} \div \frac{y^2-8y+12}{3y}$
 $\frac{(y+7)(y-2)}{3y} \cdot \frac{3y}{(y-6)(y-2)} = \frac{y+7}{3y-18}$

14. $\frac{6x+6}{x-1} \div \frac{x^2+3x+2}{2x-2}$
 $\frac{6(x+1)}{x-1} \cdot \frac{2(x-1)}{(x+2)(x+1)} = \frac{12}{x+2}$

15. $\frac{x^2+6x-27}{x^2+11x+18} \div \frac{x-3}{x^2+x-2}$
 $\frac{(x+9)(x-3)}{(x+9)(x+2)} \cdot \frac{(x+2)(x-1)}{x-3} = x-1$