

Homework 4.2: Multiplying & Dividing Rationals

Name: _____

Math 3

Directions: Simplify each rational expression. State any restrictions on the variables.

1. $\frac{4x + 6}{2x + 3}$

2. $\frac{2y}{y^2 + 6y}$

3. $\frac{20 + 40x}{20x}$

4. $\frac{7x - 28}{x^2 - 16}$

5. $\frac{3x^2 - 12}{x^2 - x - 6}$

6. $\frac{x^2 + 13x + 40}{x^2 - 2x - 35}$

Directions: Multiply. State any restrictions on the variables.

7. $\frac{2x + 4}{10x} \cdot \frac{15x^2}{x + 2}$

8. $\frac{x^2 - 5x}{x^2 + 3x} \cdot \frac{x + 3}{x - 5}$

9. $\frac{x^2 - 6x}{x^2 - 36} \cdot \frac{x + 6}{x^2}$

10. $\frac{x - 2}{(x + 2)^2} \cdot \frac{x + 2}{2x - 4}$

11. $\frac{3x^3}{x^2 - 25} \cdot \frac{x^2 + 6x + 5}{x^2}$

12. $\frac{y^2 - 2y}{y^2 + 7y - 18} \cdot \frac{y^2 - 81}{y^2 - 11y + 18}$

Directions: Divide. State any restrictions on the variables.

13. $\frac{7x^4}{24y^5} \div \frac{21x}{12y^4}$

14. $\frac{3y+3}{6y+12} \div \frac{18}{5y+5}$

15. $\frac{y^2-49}{(y-7)^2} \div \frac{5y+35}{y^2-7y}$

16. $\frac{x^2+10x+16}{x^2-6x-16} \div \frac{x+8}{x^2-64}$

17. $\frac{y^2-5y+4}{y^2-1} \div \frac{y^2-9}{y^2+5y+4}$

18. $\frac{x^2-4}{x^2+6x+9} \div \frac{x^2+4x+4}{x^2-9}$

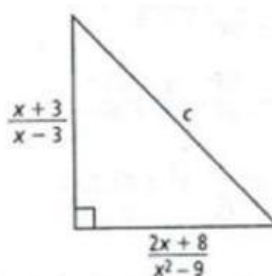
19. What is the area of the triangle shown at the right?

(F) $\frac{2x+8}{x^2-6x+9}$

(G) $\frac{x^2+6x+9}{x+4}$

(H) $\frac{x+4}{x^2-6x+9}$

(I) $\frac{2x^2+12x+18}{x+4}$



20. What is the quotient $\frac{y+2}{2y^2-3y-2} \div \frac{y^2-4}{y^2+y-6}$ expressed in simplest form? State any restrictions on the variable.