



Name _____ Date _____ Period _____

SIMPLIFYING/MULT/DIV RATIONAL EXPRESSIONS WORKSHEET

Simplify (*remember to factor when necessary*).

1. $\frac{18x^6}{27x^4}$

2. $\frac{x^2 + 6x + 8}{3x + 12}$

3. $\frac{x^2 - 7x + 12}{x^2 + 2x - 15}$

4. $\frac{12x^6}{42x^4}$

5. $\frac{x^2 + 8x + 15}{3x + 9}$

Multiply or divide (*remember to factor when necessary*).

6. $\frac{x+3}{x^2-4x+4} \cdot \frac{x^2-x-2}{x^2+4x+3}$

7. $\frac{x^2-x-12}{3x+9} \div \frac{x^2+x-20}{x+5}$

8. $\frac{15x^2}{45x^3} \div \frac{5x^6}{9x^4}$

9. $\frac{6}{x^2-9x+20} \cdot \frac{5x-25}{3x-6}$

10. $\frac{6x-12}{4x^2} \cdot \frac{3x^3}{2x-4}$

11. $\frac{3x-21}{x^2-3x-28} \cdot \frac{5x+20}{2x+8}$

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

13.
$$\frac{8v - 56}{8v + 48} \cdot \frac{v^2 + 9v + 18}{8v^2 + 24v}$$

14.
$$\frac{4x}{x + 1} \cdot \frac{x^2 - 6x - 7}{x^2 - 7x}$$

15.
$$\frac{6x - 30}{x^2 - 7x + 10} \cdot \frac{7x - 14}{6x}$$

16.
$$\frac{x + 3}{5x + 20} \cdot \frac{x^2 + 3x + 2}{x^2 + 5x + 6}$$

17.
$$\frac{x^2 - x - 12}{4x + 12} \div \frac{x^2 - 6x + 8}{6}$$

18.
$$\frac{10b^2 + 42b + 36}{6b^2 - 2b - 60} \div \frac{40b + 48}{3b^2 - 13b + 10}$$

19.
$$\frac{9r^3 - 54r^2}{9r^2 + 45r} \cdot \frac{9r^2 + 9r}{9r^3 - 54r^2}$$

20.
$$\frac{10x^2 - 28x + 16}{2x - 4} \div \frac{25x^2 - 25x + 4}{5x^2 - 41x + 8}$$