



Name _____ Date _____ Period _____

SIMPLIFYING RATIONAL EXPRESSIONS WORKSHEET

Steps to Simplifying a Rational Expression

- 1) Factor the numerator and the denominator completely
- 2) Cancel common factors

Find the domain of the polynomials:

1. $\frac{x^2 - 3}{x^2 - 3x - 10}$

2. $\frac{x^2 + 3x - 10}{x^2 + 5}$

3. $\frac{x^2 - x - 2}{x^2 + 5x - 14}$

4. Why are the domains of the following expressions not the same although the expressions are equivalent? $\frac{x^2 - 9}{x^2 + 6x + 9}$ and $\frac{x - 3}{x + 3}$

Simplify:

5. $\frac{36k^3m}{24k^4mn^5}$

6. $\frac{12x^2}{9x^2y}$

7. $\frac{42x^2}{-36x^3}$

8. $\frac{16a^2b^3c^4}{20a^7b^2c^2}$

9. $\frac{120x^3y}{25xy^5}$

10. $\frac{-16x^2y^7}{12x^5y^3z^4}$

11. $\frac{2x + 6}{4x - 12}$

12. $\frac{x^2 + 9x + 20}{2x + 8}$

13. $\frac{6x + 24}{x^2 + 7x + 12}$

14. $\frac{3x+18}{x^2+6x}$

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

16. $\frac{x^2-5x+6}{x^2+2x-15}$

17. $\frac{x^2+12x+20}{3x+6}$

18. $\frac{6x+30}{x^2+8x+15}$

19. $\frac{25a^3b^7}{-15a^8b^3}$

20. $\frac{5x-15}{x^2-3x}$

21. $\frac{38k^2m^2n}{24k^4mn^5}$

22. $\frac{7x-14}{x^2-2x}$

23. $\frac{x^2}{x^2+2x}$

24. $\frac{x^2+3x-xy-3y}{x^2-xy+5x-5y}$

25. $\frac{-x+y}{x-y}$

26. $\frac{-16x^2y^5z}{8x^3y^2z^2}$

27. $\frac{x^2-6x+8}{x^2+2x-24}$

28. $\frac{9x+9}{x^2+8x+7}$

29. $\frac{x^3+8}{x^2-5x-14}$

30. $\frac{x^4-y^4}{x^2-y^2}$