Name_____ **Date**_____

Math 0308 Assignment #4 Ch. 13 & 14

Factor by factoring out the greatest common factor.

1. $7x^2 - 56$ _____

2. $24x^4y^3 + 8x^3y^2 - 4x^2y$ _____

Factor by grouping.

3. $x^2 - 3x + 4x - 12$ _____

4. $4x^2 + 12xy - 5xy - 15y^2$ _____

Factor completely. If the polynomial cannot be factored write prime.

5. $x^2 - 7x + 10$ _____

6. $x^2 - 2x + 4$ _____

7. $x^2 - x - 42$ _____

8. $3x^2 - 3x - 18$ _____

9. $x^3 - 3x^2 - 28x$ _____

10. $x^2 - 3xy - 10y^2$ _____

11. $2x^2 + x - 1$ _____

12. $4x^2 + 7x - 2$ _____

13. $9x^2 + 12x + 4$ _____

14. $6x^2 - 34x + 40$ _____

15. $x^2 - 36$ _____

16. $x^2 + 9$ _____

17. $243 - 3x^4$ _____

Solve.

18. $x^2 - 8x = 0$ _____ **19.** $3x^2 = 12$ _____

20. $x^2 - 5x - 6 = 0$ _____ **21.** $2x^2 - x = 10$ _____

Find all the values that make the rational expression undefined.

22. $\dfrac{1}{x+7}$ _____ **23.** $\dfrac{7}{x^2 - 7x + 6}$ _____

Simplify.

24. $\dfrac{x^2 - 3x - 18}{x^2 + 6x + 9}$ _____ **25.** $\dfrac{x^2 - 1}{2x^2 - x - 1}$ _____

Perform the indicated operations.

26. $\dfrac{x^2 - 64}{7x} \cdot \dfrac{x}{x+8}$ _____ **27.** $\dfrac{2x+1}{x^2 + 5x - 6} \cdot \dfrac{x^2 + 6x}{x}$ _____

28. $\dfrac{4x}{x-4} \div \dfrac{12x^2}{x^2 - 16}$ _____ **29.** $\dfrac{25x^2 - 1}{9x^2 - 6x} \div \dfrac{5x^2 + 9x - 2}{3x^2 + x - 2}$ _____