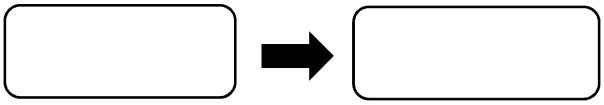
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
WARM-UP	**Directions:** Simplify the following polynomials. • $a(3a+7)$ = _____ • $-2m(m^2+6m-1)$ = _____ • $4x^3y(x^2-2y)$ = _____
WHAT IS FACTORING?	 (Simplest Form) (Factored Form) **Polynomials that cannot be factored are called _____!**
FACTORING A GCF (Greatest Common Factor)	There are several factoring methods; the approach depends on the polynomial. We will start by identifying and factoring out the ***greatest common factor*** (GCF) of the polynomial. **Steps for Factoring a GCF:** **Step 1:** Identify the GCF of the polynomial: • Check the **coefficients** for a GCF. • Now look at the **variables**. A variable must be present in all terms to be a GCF. If a variable is present in all terms, take the one with the smallest exponent. **Step 2:** Divide each term by the **GCF** and leave the remaining factors in parentheses **Step 3:** Check your work by distributing!
EXAMPLES	**Directions:** Factor each polynomial. Check your work by distributing. If a polynomial cannot be factored, write "prime." **1.** $3x + 12$ **2.** $7y - 7$ **3.** $8m + 36n$ **4.** $5x + 30y$

	5. $6a^2 + 27$	**6.** $4y^2 - 24y$
	7. $21cd - 3d$	**8.** $14gh - 18h$
	9. $15a^2b - 30ab$	**10.** $16bc^2 + 24bc$
	11. $ab - a$	**12.** $x^2y + 3xy$
	13. $5x - 13y$	**14.** $18a^2bc^2 - 48abc^3$
	15. $2x^2y - 2xy^2 + 4xy$	**16.** $9r^8 - 18r^2s - 24rs^2$
	17. $6y^4 + 14y^3 - 10y^2$	**18.** $12a^5b^2 - 36a^4b^3 - 6a^2b^2$
	19. $14gh^2 + 28gh + 14h$	**20.** $18x^2yz - 24xz^2 + 36yz^3$
	21. $m^3n - m^2n^2 + 5mn^3$	**22.** $16xy^2 + 28xy + 8y$
	23. $35a^2 - 20ab^2 + 15a$	**24.** $3a^3b^2c - 9a^2b^3c^2 + 15ab^4c^3$