Name:_____

Period:_____

Finals Review Factoring:

Steps to Factor by GCF: Whenever you factor: **Always Check GCF First!** **1)** Think of the biggest number that can divide **ALL TERMS EVENLY.** Don't forget you can also divide by variables. **2)** Divide all terms by that number **3)** Put the answer in parenthesis with **the number you divided by** on the outside.	**Examples:** 1) $3x^2 + 9x$ 2) $20x + 10$

Steps to Factor by the Diamond Method **1)** Draw an  **2)** Put c on the top and b on the bottom **3)** What numbers **Multiply to c and add to b?** Put these numbers in the left and right blanks of the diamond. **4)** Write your answer in factored form: $(x + p)(x + m)$ p and m being the numbers in the left and right blanks of the diamond.	**Examples:** 1) $x^2 + 10x + 21$ 2) $x^2 + 4x - 32$ 3) $x^2 - 16$

Steps to Factor by the Long Diamond Method	Examples:
Use after checking GCF and when $a \neq 1$ 1) Draw an  2) Put $(a \cdot c)$ on the top and b on the bottom 3) Complete the diamond like normal. 4) Divide the left and right numbers by a, and **reduce the fractions.** ***Don't forget this step!*** 5) Write in factored form. 6) If there are any fractions, the **denominator** of the fraction goes in front of the x, and the numerator stays.	1) $3x^2 + x - 2$ 2) $10x^2 + x - 3$

Practice Problems:

Factor using any method: **(Always check GCF first)**

1) $6x + 3$

2) $24x^2 - 8x$

3) $10x^2 + 5x^2$

4) $3x^2 - 9x - 30$

(This will be GCF first, then diam afterwards)

5) $x^2 - 5x - 24$

6) $x^2 - 6x + 8$

7) $x^2 + 11x + 18$

8) $x^2 + 9x - 36$

9) $10x^2 - x - 3$

10) $3x^2 + 10x + 3$

11) $4x^2 - 10x - 6$

(GCF, then Long Diamond)