Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 1 IF.3 and IF.4 Review (Extra Practice!)**

IF.3 Operations on Polynomial Expressions

Directions: Simplify the following polynomials.

1. (-5$k^{4}$ + 3$k^{2}$) - (-3$k^{4}$ - 14$k^{2}+9k^{5}$ –68) 2. (4$x^{6}$ + 3$7x^{4}$) + ($x^{6}$ - 5$x^{3}$)

$3. \left(17x^{2}+3x-9\right)+(3x^{2}-4x-11)$ 4. $\left(5x^{3}-6x^{2}+8x-10\right)- (-8x^{4}+35x^{3}+4x^{2})$

5. $5(-2x^{4}+2y-6m)$ 6. $-3x^{3}(3x-7)(2x-1)$

7. ($x^{4}$ – 2$x^{3}$ + 1)($x^{2}$ + 5*x* -8) 8. $(x-y)(x^{2}+xy+y^{2})$

IF.4 Factor Polynomial Expressions. **Factor each polynomial completely. Write your answer as a product of its factors.**

**12.** $15x^{2}+20x^{4}+35x$ 13. $8x^{3}-125y^{3}$

**14.** $x^{4}-18x^{2}+32$ 15. $3x^{2}-7x-6$

16. $36x^{2}-121m^{2}$ 17. $3x^{4}+9x^{3}-30x^{2}$