***Polynomials – Exam Review #7***

*Find each* ***sum*** *or* ***difference****.(Be careful with your* ***negatives!****)*

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

 **3.** (4$k^{2}$ + 8*k* + 2) – (2*k* + 3) **4.** (2$m^{2}$ + 6*m*) + ($m^{2}$ – 5*m* + 7)

*Write each polynomial in* ***standard form****. Then, identify the* ***leading coefficient****.*

**5.** 8$x^{2}$ – 15 + 5$x^{5}$ **6.** 10*x* – 7 + $x^{4}$ + 4$x^{3}$

**7.** 13$x^{2}$ – 5 + 6$x^{3}$– *x* **8.** 4*x* + 2$x^{5}$ – 6$x^{3}$+ 2

*Find each* ***product****.*

 **9.** *x*(2*x* – 5) **10.** 2*y*( *y* – 4)

 **11.** 3*x*(5$x^{2}$ – *x* + 4) **12.** –3$n^{2}$(–2$n^{2}$ + 3*n* + 4)

***Simplify*** *each expression. (HINT: First, get rid of any parentheses. Then, combine like terms.)*

**13.** *f* (5*f* – 3) – 2*f* **14.** –*p*(2*p* – 8) – 5*p*

**15.** 2*x*(3$x^{2}$ + 4) – 3$x^{3}$ **16.** 4*a*(5$a^{2}$ – 4) + 9*a*

*Find each* ***product****.* ***Show all work.***

**17.** (*n* – 5)(*n* + 1) **18.** (3*c* + 1)(*c* – 2)

**19.** (5*a* – 2)(2*a* – 3) **20.** (*w* + 4)($ w^{2}$ + 3*w* – 6)

***Factor*** *each polynomial.*

**21**. 6x + 36 **22**. 25n + 15np

**23**. w3y – wy2 **24**. 4$a^{2}b^{2}$ + 16*ab*

***Factor*** *each quadratic trinomial.(Remember, this is when we have to find “magic numbers”: What multiplies to \_\_\_ and adds up to \_\_\_?)*

**25.** $w^{2}$ – *w* – 6 **26.** $y^{2}$ – 6*y* + 8

**27.** $x^{2}$– 8*x* + 15 **28.** $b^{2}$ – 9*b* + 8