Math 1215 Homework 5 ANSWER KEY
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I Exponent &Scientific Notation

1. $(-3)x^2\,x^3 =$ $-3x^5$

2. $(ab^2)(a^2b^3) =$ a^3b^5

3. $(-10x^4y^2)(3x^2y)$
$=$ $-30x^6y^3$

4. $\frac{36x^9y^5}{18x^3y^2} =$ $2x^6y^3$

5. $\frac{-24m^6n^3}{6m^2n^2} =$ $-4m^4n$

6. $\frac{12x^5}{4x^{-2}} =$ $3x^7$ note: $5-(-2)=5+2=7$

7. $a^2b^{-2}c^0$ ($c^0=1$)
$= a^2\cdot\frac{1}{b^2} =$ $\frac{a^2}{b^2}$

Change the following numbers from standard form into scientific notation.

8. 62,000 $=$ 6.2×10^4

9. 0.000071 $=$ 7.1×10^{-5}

Change the following numbers from scientific notation into standard form.

10. $6.1 * 10^4 =$ 61,000

Simplify the following problems using operations with scientific notation, write you answer in both standard form and scientific notation.

11. $(2 * 10^3)(4 * 10^2)$
$=$ 8×10^5 scientific notation
$=$ 800,000 standard Form

12. $\frac{12.4*10^{-4}}{4*10^2} =$ 3.1×10^{-6} scientific notation
$=$ 0.0000031 standard Form

II Polynomials:

13. $(2x^2-3x+1)+(-x^2+x-7)$

$= 2x^2-3x+1-x^2+x-7$: Collect like-terms

$= \boxed{x^2-2x-6}$

14. $(3x^2-2x)-(7x^2-2x+1)$

$= 3x^2-2x-7x^2+2x-1$

$= \boxed{-4x^2-1}$

15. $(2n^3+10)-(-n^2+3n)$

$= 2n^3+10+n^2-3n$

$= \boxed{2n^3+n^2-3n+10}$: Standard Form

16. $(x+4)(x+7)$: use the FOIL method

$= x^2+7x+4x+28$

$= \boxed{x^2+11x+28}$

17. $(-2m^2-6m+3)+(-3m^2+m-1)$

$= -2m^2-6m+3-3m^2+m-1$

$= \boxed{-5m^2-5m+2}$

18. $(9a^2-2a+2)+(5a^2-5a+7)$

$= 9a^2-2a+2+5a^2-5a+7$

$= \boxed{14a^2-7a+9}$

19. Rewrite the following polynomial in *standard form*: → Exponents go in descending order

$7x^3-6x^4-3x^2+22x^3 = \boxed{-6x^4+29x^3-3x^2}$

What is the *constant term*, what is the *leading coefficient*, what is the *degree?*

Constant term: none

Leading Coefficient: -6

degree: 4