Algebra I Homework: Week of Oct 1-5

Monday, Oct 1

Correct "Student Radical Test." Make all corrections showing all work to receive full credit. If the questions are correct, be sure to say they are correct.

Tuesday, Oct 2

1. Simplify the given expressions:

   a. $\left(-3x^3y^7\right)\left(12x^5y\right)$ b. $\frac{63x^{10}y^9}{7x^4y^3}$ c. $4^3 \cdot 4^{12}$

   d. $\frac{3x^3}{x^8}$ e. $\frac{(-3x^2)(8x^{12})}{6x}$ f. $(5x^2y)(2x^4y^8)(3xy)$

2. Perform the indicated operations and simplify:

   a. $\left(2\sqrt{96}\right)\left(3\sqrt{3}\right)$ b. $\frac{15\sqrt{160}}{5\sqrt{2}}$ c. $\frac{2}{3\sqrt{6}}$

3. Simplify: $24 \div 2(4-1)-1$
4. Expand: (2x +1)(x – 2)
5. Combine like terms:

   a. $7x^2-3x+8x^2+13$ b. 3x + 10 – 8x + 4

6. Given Set A = {Mets, Yankees, Marlins, Dodgers, Red Sox} and Set B = {Mets, Red Sox}

   a. Fill in the blank: Set _____ is a subset of Set _____
   b. Find $A \cup B$
   c. Find $A \cap B$

Wednesday, Oct 3

1. Simplify the given expressions:

   a. $\left(x^3\right)^4$ b. $\left(3x^8\right)^3$ c. $\left(3xy^3\right)^3$

   d. -2^3 e. $\frac{\left(x^5\right)^3}{x^4}$ f. $\frac{\left(10x^2\right)^2}{20x^{12}}$

   g. $\frac{x^5x^8}{x^{10}}$ h. $\left(\frac{8x^{10}}{4x^3}\right)^2$ i. $(3g^8h^4)(8h^4g^9)(-3g^3h^2)$

2. Perform the indicated operations and write your answer in scientific notation:

   a. $(2.4\times10^3)(3.4\times10^9)$ b. $\frac{21\times10^{16}}{4.2\times10^7}$ c. $\frac{(1.6\times10^3)(5.9\times10^{15})}{1.18\times10^2}$

3. A star that is about 12,000,000,000,000,000,000,000 miles away can be seen by the Palomar telescope. How can we represent this distance in scientific notation?
4. Simplify: $2-4(3-2)\div2$
5. Solve for k: $z^4 \cdot z^k = z$
6. Expand: (2x – 2)(x + 4)
7. Write the following in Interval Notation:

   a. $x \geq 5$ b. $-3 < x \leq 10$ c. $x < -1$ *or* $x > 7$

Thursday, Oct 4

1. Simplify the given expressions:
   a. x^0 b. $3x^0$ c. $(3x)^0$
   d. $\frac{x^{-3}p^0}{x^{10}}$ e. $\frac{3x^{-2}y}{6x^4y^{-3}}$ f. $\frac{x^{-3}y^3}{z^{-4}y^8}$
2. Multiply:
   a. 4x(x + 3) b. $(3x^3)(7x)$ c. $(4x^2y^9)(3x^2y^3)$
3. Multiply and write in correct scientific notation: $(6.2\times10^3)(2.4\times10^6)$
4. Write the following as an inequality, then graph on a number line:
   a. $[-3,\infty)$ b. $[3,5)\cup(8,\infty)$ c. $(-2,7]$
5. Perform the indicated operations and simplify:
   a. $\sqrt{600}$ b. $(-3\sqrt{10})(-2\sqrt{20})$ c. $\frac{-20\sqrt{1215}}{5\sqrt{5}}$ d. $\frac{\sqrt{2}}{2\sqrt{12}}$

Friday, Oct 5

1. Complete worksheet from class if not done so already.
2. Simplify:
   a. $(4a+5b-3c)+(3a-2b-6c)$ b. $(x^3+9x-5)-(4x^3-12x+5)$
   c. $(4x^2 - 6x + 7) + (-19x^2 - 15x - 18)$ d. $(-9x^2 - 4x - 4) - (-9x^2 - 11x + 12)$
3. Subtract x^2-2x+4 from $4x^2-6x+5$
4. Find the difference between $3x^2 - 3x + 3$ and $9x^2 - 6x + 2$
5. Write the following polynomial in decreasing degree order. Then identify the degree of the polynomial.
   a. $12x^3+15x^2-10x^4+3$ b. $-5x+12+7x^2-2x^3$
6. Simplify the given expressions:
   a. $\frac{10x^3y^{-4}}{x^2y^7}$ b. $\left[\left(a^6\right)^2\right]^2$ c. $\frac{\left(3x^4\right)^2}{3x^3}$
7. Find the perimeter of the following rectangle given its width and length: