Math 6c, homework 17.

1. Write a monomial in a standard form:
   $a.\ 3ab^2c \cdot \frac{1}{4}c;$ $b.\ 6a^2y^3z \cdot \frac{1}{2}ax^5yz;$
   $c.\ \frac{5ab}{10};$ $d.\ 4x^2y^4 \cdot (-5)yx^3;$

2. Multiply a polynomial by a monomial:
   $a.\ (2x^3 - 3xy)(-5x);$ $b.\ (2x^2y + 4x)x^2;$ $c.\ -3x^2(4x^3 - x + 2);$

3. Do the multiplication of two polynomials:
   $a.\ (2x^2y + 4x)(x^2 + 3y^2);$ $b.\ (3x^2 + y)(y - 2x^2);$ $c.\ (2mn^2 - m)(n - m^2);$

4. Represent as polynomial (do the multiplication). What did you noticed?
   $a.\ (3x + y)(3x + y);$ $b.\ \left(\frac{1}{4}s + 3\right)^2;$ $c.\ (1 - 5x)(1 - 5x);$

   $d.\ (3 + l)(3 - l);$ $e.\left(\frac{1}{3}a^2 + 1\right)\left(\frac{1}{3}a^2 - 1\right);$ $f.\ (0.5x - 0.3y)(0.5x + 0.3y)$

5. Simplify the expressions:

   $a.\ \left(0.3a^{n+1} - \frac{1}{12}a^n - 0.2a^{n-1}\right) \cdot 24a^n - 6a^n\left(\frac{1}{6}a^{n-1} - a^n + 0.3a^{n+1}\right)$
   $b.\ \left(-1\frac{1}{9}b^{n-1} + \frac{1}{3}b^n - 6b^3\right) \cdot 0.9b^{n+1} - 0.8b^n\left(\frac{7}{8}b^n - b^{n+1} - 1\frac{1}{8}b^4\right)$
   $c.\ (x + 1)(x^2 - x + 1) - (x^2 - 1)x;$
   $d.\ (a^3 - b^3)(a^3 + b^3) + (a^2 + b^2)(a^4 - a^2b^2 + b^4);$

6. Dry cranberries contain 25% of water. How much water should be evaporated from 5 kg of fresh cranberries to get dry cranberries, if fresh cranberries contain 85% of water?
7. Evaluate (answer is 56), show your solution:

$$\frac{\left(1.75 \cdot 3\frac{2}{3} + \frac{1}{3} \cdot 1.75\right) : 0.1 \cdot \frac{4}{7} - 21\frac{1}{3}}{0.4 \cdot 4\frac{5}{6} \cdot 2.5 - 9 : \left(5\frac{4}{5} \cdot 0.1 + 1.42\right)}$$

8. Find altitudes and medians on the following picture: