Math 4d. Homework 21.

1. The cats of the Siberian, Angora, Persian and Siamese breeds were presented at the exhibition of cats. Siamese cats were 2 times more than Angora, Persian was 1.5 times more than Siamese, and Siberian was 13 less than Persian. How many cats of each breed were there if there were 77 cats in total?

2. Draw 2 lines and mark 5 points so that each line contains 3 points.

3. Draw 4 lines and mark 6 points so that each line contains 3 points.

4. How many intersections can 4 lines produce? Draw all possible answers (use ruler and pencil).

5. *On a far away planet inhabitants only know natural numbers and 0 (they only have 0, 1, 2, 3,....). They can add and multiply numbers just as we do, all properties of these operations hold. Also, they have an arithmetic operation, which they call multadd. This operation has symbol $\oplus$ and is defined as
$$a \oplus b = a \cdot b + a + b$$
   a. If you would be e student in the school on that planet, evaluate the following:
$$2 \oplus 3; \qquad 4 \oplus 9, \qquad 0 \oplus 712; \qquad 2 \oplus 8 + 3 \oplus 8;$$

   b. Prove that this operation is commutative ($a \oplus b = b \oplus a$)
   c. Check if the distributive property hold?
$$a \oplus (b + c) = a \oplus b + a \oplus c$$
   d. Which number has the same property as 1 for multiplication ($a \cdot 1 = 1$)
$$a \oplus ? = a$$

6. Evaluate:
$$\frac{\left(3\frac{1}{3}:10 + 2\frac{1}{6}:3.25\right):0.125}{\frac{2}{13}\cdot 5.2 + 3\cdot\frac{2}{13} + 4.8\cdot\frac{2}{13}}$$

Answer is 4.

7. Dry apricots contain 22% of water. How much fresh apricot were used to produce a 200 g package of dry apricot if fresh apricots contain 85% of water?