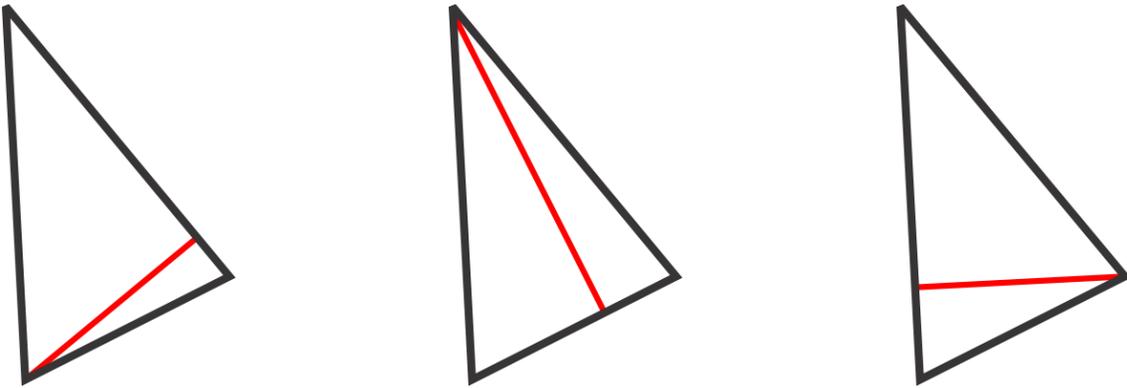


Math 4e. Homework 21.

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. With a ruler measure high and corresponding base and calculate the area of a triangle for all three possible pairs of high and base. Did you get exactly same number? Why?



3. *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 were a student in the school on that planet, evaluate the following:

$$2 \oplus 3; \quad 4 \oplus 9, \quad 0 \oplus 712; \quad 2 \oplus 8 + 3 \oplus 8;$$

- 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 ($a \cdot 1 = 1$)

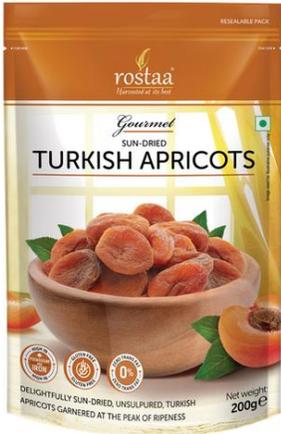
$$a \oplus ? = a$$

4. 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.

5. 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?



6. A boat sailed up the river 21.6 km in 1.2 hours. By the same time 1.2 hours, it will sail 4.8 km more if goes down the river. What is the speed of the river flow?