Math 4B. Homework #19. Due on March 1-st.

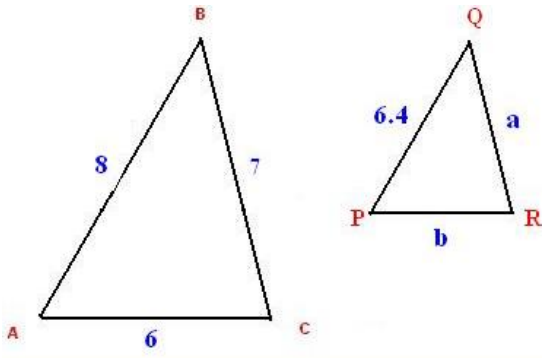
Review:

Shapes are similar if their corresponding angles are all congruent and their corresponding sides are proportional.

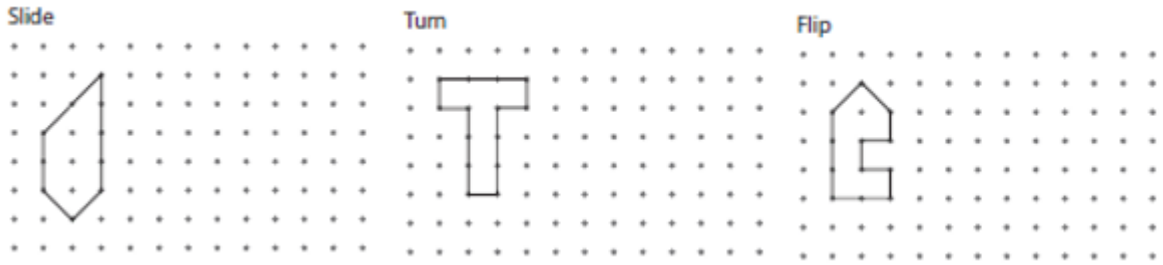
Two triangles are said to be similar when they have same shape, but can have different size. Similar triangles have equal corresponding angles and proportional corresponding sides. This proportion is known as similarity ratio.

1. **Determine the values of missing sides a and b of triangle PQR if PQR is similar to ABC**

   Hint: If two triangles are similar, then the ratio of their corresponding sides is the same.

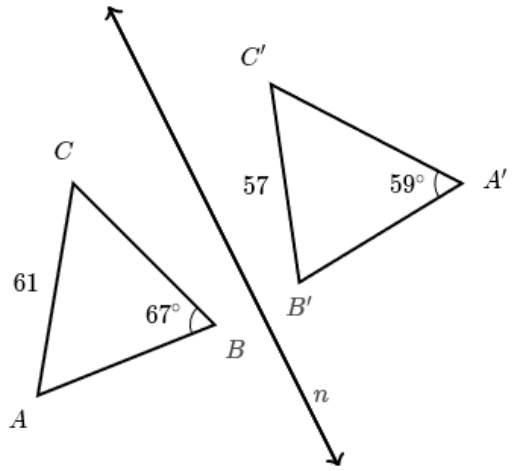


2. **Move each shape according to the given instruction**



3.

Triangle $\triangle ABC$ is reflected across line n to create $\triangle A'B'C'$.

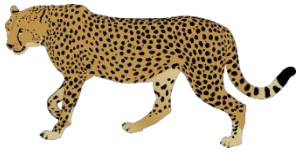


What is the measure of $\angle C$?

4. In a dried fruit mix, there are 7 parts of dried apples, 4 parts of dried pears and 5 parts of dried apricots. What is the weight (how many grams) of apples, pears, and apricots in the fruit mix, if the total weight of the mix is 1600g?

5. In order to prepare a homemade dried fruits and nuts mix Rishika took 6 parts of raisins, 5 parts of dried cranberries and 3 parts of walnuts. Cranberries and walnuts altogether weighted 2 kg 400 g. What was the weight of the mix that Rishika prepared?

6. Represent the following values of speed in $\frac{km}{h}$ units and connect to the appropriate pictures.

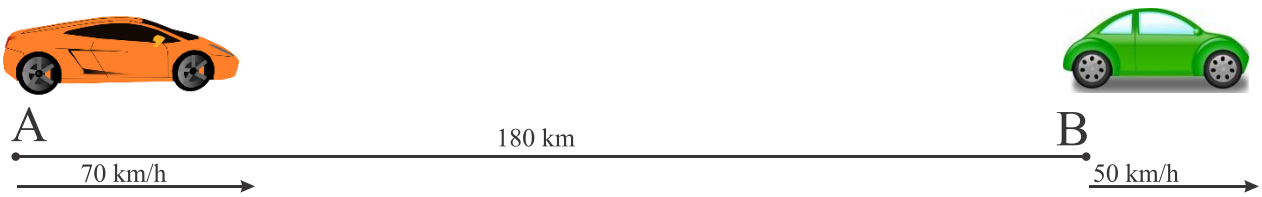


$5.4\frac{m}{h} =$

$91.7\frac{m}{min} =$

$1.83\frac{km}{min} =$

7. Two cars start moving at the same time in the same direction from cities A and B, as shown in the picture below.



How many hours will it take for the faster car to catch up with the slower car? How far from the city A will they meet?

8. The distance between two cities is 165 km. Two cars started moving toward each other from the two cities at the same time and met after 1.5 hour at the rest area, which is 90 km from the city A. What is the speed of each car?

9. *A car travels *x* km in 2 hours and a bus travels *x* km in 3 hours. How much faster is a car compared to a bus?

10. Divide :

Example: Divide 16 in the ratio of 1:3. What is the total number of parts we need to divide "16" into? The total number of parts in which the number 16 is divided is 4 (1:3). So each part would be 16:4=4. To divide 16 in the ratio of 1:3 we will take 4 (1 part) and 12 (3 parts). The answer is 4:12.

a) 12 in the ratio of $1:3$

b) 15 in the ratio of $2:3$

c) 48 in the ratio of $\frac{1}{3} \div \frac{1}{5}$ (remember that to convert this type of a ratio into a simple form you have to bring your fractions to a common denominator. Just remember how we divide fractions using common denominator)

d) 100 in the ratio $\frac{1}{2} \div \frac{1}{3}$

11. 20 apples are distributed between Kevin and Eric in the ratio 2:3. Find, how many does each get? What is the fraction of apples Eric gets?

12. Find

a) 1% of 100 b) 100% of 49 c) 7% of 200 d) 1% of 300	e) 20% of 15 f) 120% of 250 g) 5% of 50 h) 25% of 48

13. Use distributive property of addition and multiplication to solve the following numeric expressions in the most convenient way:

$$8\frac{5}{11} \cdot 4\frac{2}{9} + 8\frac{5}{11} \cdot 6\frac{7}{9}$$

$$6\frac{3}{5} \cdot 7\frac{1}{6} - 2\frac{1}{6} \cdot 6\frac{3}{5}$$

14. Rewrite without parentheses:

$34 - (a - 28) =$

$54 + (x - 11.8) =$

$1.2 \cdot (s + 3) =$

$(2 + x)(3 + a) =$