MATH 4: Homework 21

Due March 17, before the start of the class

Homework must be submitted on time—at least 15 minutes before the start of the class.
Homework will not be graded after the solutions are posted on Google Classroom.

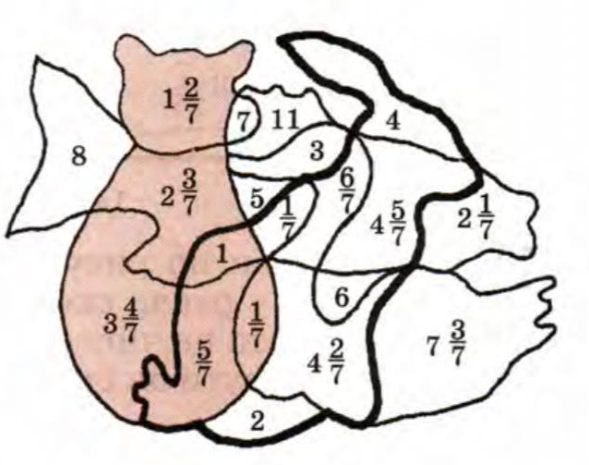
Write the answers on separate sheets of paper, not between the lines.

1. Write an expression to find 15% of a number ***a***.
   Calculate 15% of the following numbers: 1540, 220, and 10.

2. Write an expression to find a number if 4% of it is equal to ***b***.
   Find the numbers for which 4% is equal to 8, 12, and 55.

2. In a mix of dried fruits, there are 7 parts dried apples, 4 parts dried pears, and 5 parts dried apricots, which means they should be mixed in the ratio 7:4:5. What is the weight, in grams, of the apples, pears, and apricots in the fruit mix if the total weight is 1600g?

3. Find the sum of the numbers hidden in the cat, rabbit, fish, and duck.
   a) What number is hidden in the rabbit, cat, and fish at the same time?
   b) What number is hidden in the rabbit, cat, and duck at the same time?
   c) What number is hidden in the rabbit, fish, and duck at the same time?

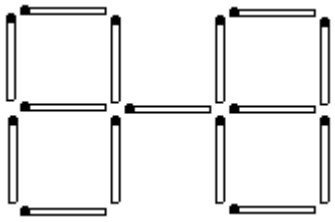


4. There are 40000 books in a library. 75% of all books are in English, 10% are in Spanish, and the rest are in French and German. How many books are there in the library in English and Spanish?

5. In a department store, there is a sale of 25% off on everything. How much does the dress cost if its price before the sale was $80?

6. There are 255 seats in the theater, but only 170 tickets have been sold. Which percent of the total number of seats will be empty if only 90% of the people who bought tickets show up for the movie?

7. Can you move two matches on the picture to make 5 equal squares?



8. Finish what we started in class.

Density is defined as the ratio of the mass of the object divided by its volume.

$$density = \frac{mass}{Volume}$$

Use the Google Classroom link and open the PHET Density simulation

Select **Intro** and Wood.

a) Calculate the density of wood using the equation.
b) Increase the volume to maximum. What happens with the mass? What is the density?
c) What will the mass of the wood be if the volume increases to 10 L?

Select Ice

d) Calculate the density of the ice using the equation.
e) Is the ice denser than water if the water density is 1 kg/L?
f) Ice is almost entirely submerged but doesn't sink? Why? What do you think is an easy check to do that an object will not sink?
g) Can you tell what percentage of an iceberg is underwater?