Math 4a. Homework 7.

Problems marked with * are more difficult.

1. Simplify (reduce) the following fractions:
   Example:

$$\frac{22}{66}=\frac{22}{22\cdot 3}=\frac{22:22}{22\cdot 3:22}=\frac{1}{3}$$

$$\frac{22}{66},\ \frac{125}{75},\ \frac{75}{100},\ \frac{24}{360},\ \frac{125}{1000},\ \frac{100}{250},\ \frac{198}{126};$$

$$\frac{2\cdot 3}{4\cdot 5},\ \frac{2\cdot 3}{7\cdot 2},\ \frac{5\cdot 4}{4\cdot 9},\ \frac{7\cdot 5}{2\cdot 7}$$

2. Compute (hint: reduce the fraction before final computation, if possible):
   Example:

$$\frac{2}{5}\cdot\frac{5}{14}=\frac{2\cdot 5}{5\cdot 7\cdot 2}=\frac{1}{7}$$

$$\frac{1}{3}\cdot\frac{2}{5};$$

$$\frac{2}{9}\cdot\frac{3}{4};$$

$$\frac{9}{10}\cdot\frac{10}{99};$$

$$\frac{2}{3}\cdot\frac{6}{7}\cdot\frac{1}{10}=$$

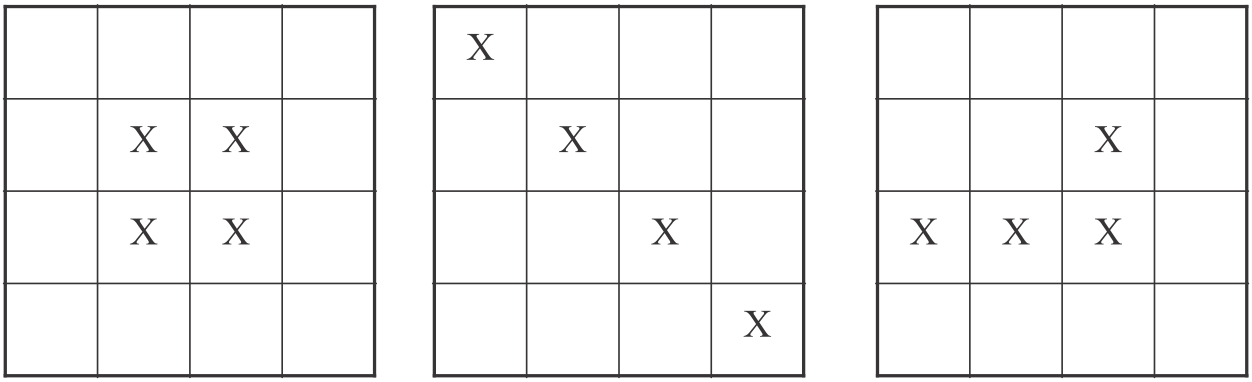
$$\frac{1}{3}\cdot 90\cdot\frac{1}{5}=$$

$$36\cdot\frac{1}{12}\cdot\frac{1}{3}=$$

3. Fill the empty spaces in the table below:

a	56		36		72
b	8	6		5	
a · b		108	144		
a ÷ b				14	24

4. Cut each square on a picture below into 4 equal parts so that each part will have one "X".



5. *You need to cut $\frac{1}{2}$ m from a rope $\frac{2}{3}$ m long. You don't have any tools to do the measurements. How you can do it?

6. There are three short stories in a book. Paulina read the first story in $\frac{1}{3}$ of one hour. She spent $\frac{1}{6}$ of an hour more reading the second story than reading the first one. The third story she read in $\frac{7}{12}$ of an hour less than the two previous stories together. How much time did it take her to read this book?

7. Fill in the missing number to have the right equalities.
   Example:
   $\frac{2}{5} \cdot \_\_\_ = 1$, $\frac{2}{5} \cdot \frac{5}{2} = 1$

   $\frac{3}{7} \cdot \_\_ = 1$
   $\frac{8}{5} \cdot \_\_ = 1$
   $\frac{3}{7} \cdot \_\_ = 1$
   $2\frac{1}{5} \cdot \_\_ = 1$
   $\_\_ \cdot 1\frac{3}{5} = 1$
   $\_\_ \cdot 3\frac{1}{4} = 1$

8. What will be the shape if the goat is attached to the frame like on the picture? Draw to scale1 cm for 1 m. Use a ruler and a compass.