Homework for Lesson № 26

1 Convert the units (1 m = 100 cm = 10 dm = 1000 mm; 1 kg = 1000 g):

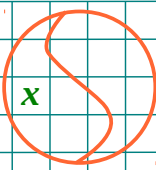| 31 cm = m	29 g= kg	7 dm = m	11 min = h
1 mm = cm	3 mm = cm	13 min = h	7 cm = dm
1 mm = m	9 cm = m	17 g = kg	3 cm = m

2 Solve the equations:
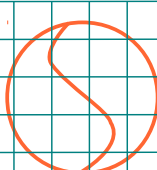
$$x + \frac{1}{6} = \frac{1}{3}$$

x

$x =$

$x =$

$$\frac{2}{3} - x = \frac{1}{6}$$
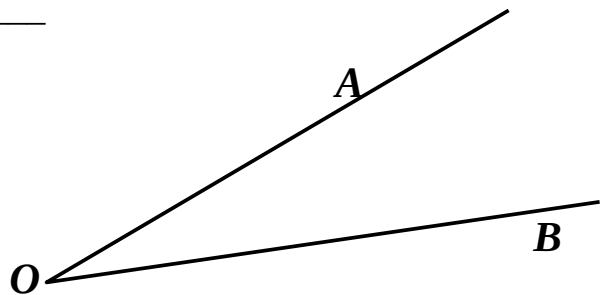
$x =$

$x =$

$$x - \frac{2}{7} = 1$$

$x =$

$x =$

3 Use a compass and a straight edge to plot $\angle AOX = \angle AOB$ and record your algorithm.

1. Plot w = Circ(,   )   _____

2. Find _____   _____

3. Find _____

4. Plot q = Circ(,   )

4 Write the programs to calculate the following expressions, for each one write a corresponding transformed expression resulting from each step.

$$6w - 4x \qquad\qquad p + (2x - 3) : 4$$

1. $6 \times w$ ①$- 4x$

2. _____ _____

3. _____ _____

1. _____ _____

2. _____ _____

3. _____ _____

4. _____ _____

5 Fill in the blanks and calculate:

$$16 \times \frac{3}{4} = 16 : \square \times \square = \qquad\qquad 18 \times \frac{1}{3} = 18 : \square \times \square =$$

$$15 \times \frac{2}{5} = 15 \times \square : \square = \qquad\qquad 24 \times \frac{2}{3} = 24 \times \square : \square =$$

6 Calculate:

$$2 : \frac{2}{7} = 2 \times \frac{\square}{\square} = \qquad 1 : \frac{3}{5} = 1 \times \frac{\square}{\square} = \qquad 6 : \frac{5}{4} = 5 \times \frac{\square}{\square} =$$

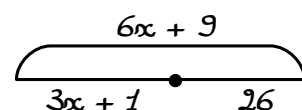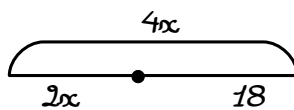$$4 : \frac{1}{3} = 4 \times \frac{\square}{\square} = \qquad 5 : \frac{3}{5} = 5 \times \frac{\square}{\square} = \qquad 2 : \frac{3}{4} = 2 \times \frac{\square}{\square} =$$
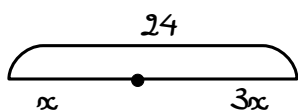
$$6 : \frac{2}{7} = 6 \times \frac{\square}{\square} = \qquad 4 : \frac{1}{9} = 4 \times \frac{\square}{\square} = \qquad 1 : \frac{2}{7} = 1 \times \frac{\square}{\square} =$$

7 **In your notebook** write and solve equations based on the drawings:

24	4x	6x + 9
x · 3x	2x · 18	3x + 1 · 26

8 Calculate:

$6 : \dfrac{2}{3} = 6 \times \dfrac{\Box}{\Box} =$ 　　　　$8 : \dfrac{2}{5} = 8 \times \dfrac{\Box}{\Box} =$ 　　　　$5 : \dfrac{3}{4} = 5 \times \dfrac{\Box}{\Box} =$

$7 : \dfrac{1}{3} = 7 \times \dfrac{\Box}{\Box} =$ 　　　　$4 : \dfrac{3}{5} = 4 \times \dfrac{\Box}{\Box} =$ 　　　　$6 : \dfrac{3}{4} = 6 \times \dfrac{\Box}{\Box} =$

9 Solve the equations:

Way one (old)

$$\dfrac{3}{7}x = 12$$
$$\dfrac{1}{7}x =$$
$$x =$$
$$x =$$

Way two (new)

$$\dfrac{2}{3}x = 8$$
$$x = 8 : \dfrac{2}{3}$$
$$x = 8 : \quad \times$$
$$x =$$

Choose your way

$$\dfrac{6}{11}x = 12$$
$$x =$$
$$x =$$
$$x =$$

10 Transform the fractions into equivalent ones by changing their denominators and factors appropriately. Some examples are impossible to do. Cross them out.

$\dfrac{2}{4} = \dfrac{\Box}{12}$ 　　　　$\dfrac{5}{7} = \dfrac{\Box}{21}$ 　　　　$\dfrac{6}{9} = \dfrac{\Box}{3}$ 　　　　$\dfrac{4}{13} = \dfrac{\Box}{7}$

$\dfrac{\Box}{6} = \dfrac{2}{12}$ 　　　　$\dfrac{\Box}{9} = \dfrac{3}{26}$ 　　　　$\dfrac{15}{10} = \dfrac{3}{\Box}$ 　　　　$\dfrac{\Box}{7} = \dfrac{12}{21}$

11 There are 240 students in the third grade and each of them either like math, language arts, or both. ⅘ of them like math, ⅝ of them like language arts. How many students like both math and language arts?

Math 　 ELA

_____
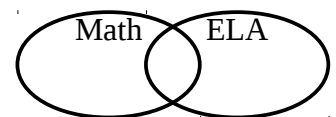
12 Simplify:

$$\frac{6}{8} = \frac{\square}{\square}$$
$$\frac{24}{32} = \frac{\square}{\square}$$
$$\frac{27}{9} = \frac{\square}{\square}$$
$$\frac{4}{8} = \frac{\square}{\square}$$

$$\frac{5}{15} = \frac{\square}{\square}$$
$$\frac{14}{21} = \frac{\square}{\square}$$
$$\frac{8}{32} = \frac{\square}{\square}$$
$$\frac{60}{90} = \frac{\square}{\square}$$

$$\frac{8}{16} = \frac{\square}{\square}$$
$$\frac{30}{50} = \frac{\square}{\square}$$
$$\frac{7}{28} = \frac{\square}{\square}$$
$$\frac{3}{9} = \frac{\square}{\square}$$

13 Compare the fractions (<, >, =) by expanding them to a reasonable common denominator:

$$\frac{\square}{20} = \frac{3}{4} \quad \square \quad \frac{2}{5} = \frac{\square}{20}$$
$$\frac{\square}{\square} = \frac{2}{5} \quad \square \quad \frac{3}{7} = \frac{\square}{\square}$$

$$\frac{\square}{\square} = \frac{3}{4} \quad \square \quad \frac{5}{8} = \frac{\square}{\square}$$
$$\frac{\square}{\square} = \frac{3}{5} \quad \square \quad \frac{7}{10} = \frac{\square}{\square}$$

14 Present the following fractions as sequences of multiplications and divisions. Check your sequences by calculating.

$$\frac{\square}{\square} = \frac{2\times6}{4} = \square : \square \times \square =$$
$$\frac{\square}{\square} = \frac{10\times30}{6\times5} = \square \times \square : \square : \square =$$

15 Simplify these fractions without calculations:

$$\frac{4\times7}{9\times4} = \frac{\square}{\square}$$
$$\frac{3\times27\times2}{2\times8\times27} = \frac{\square}{\square}$$
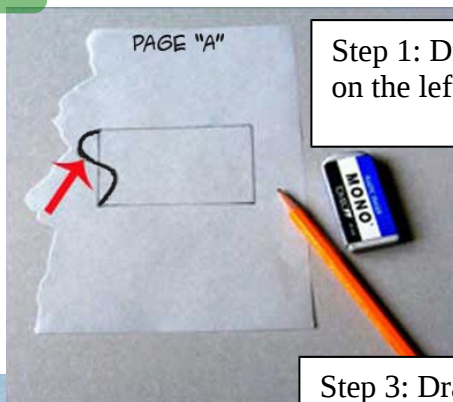$$\frac{12\times k\times3}{3\times19\times12} = \frac{\square}{\square}$$

$$\frac{5\times9}{5\times7} = \frac{\square}{\square}$$
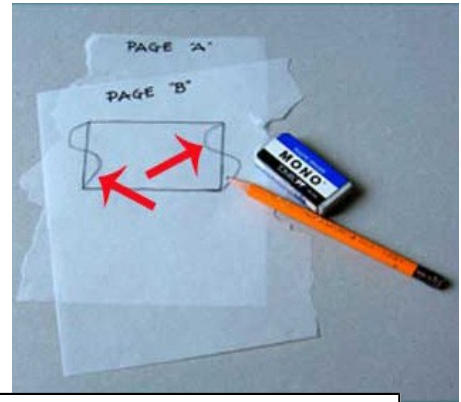$$\frac{7\times11\times4}{7\times5\times11} = \frac{\square}{\square}$$
$$\frac{13\times p\times19}{19\times m\times13} = \frac{\square}{\square}$$

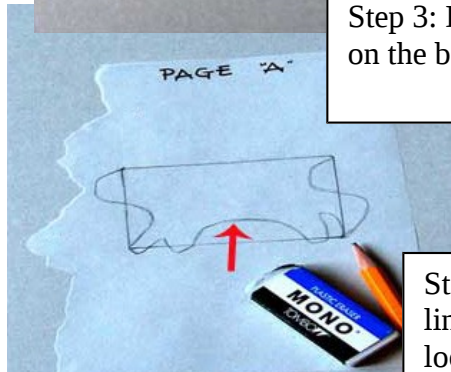**16** Can you help LJ and FT prepare the mouse hole for The Grand-Grand-Ma visit? Remember the rules?

      1) all rugs should be rectangular ,
      2) they can't overlap with each other, and
      3) all floor surface should be covered with the rugs.

Can you help Little Joe and Foxy Tail in these rooms?

This is a new room. Make you own rectangular rugs and write their areas.

17 **Creating your own tessellation (http://www.tesselations.org/diy-paper-a.html)**

Step 1: Draw a squiggly line on the left of the rectangle

Step 3: Draw squiggly lines on the bottom of the shape

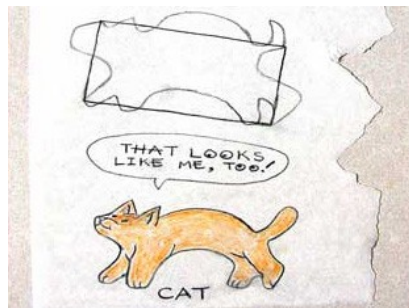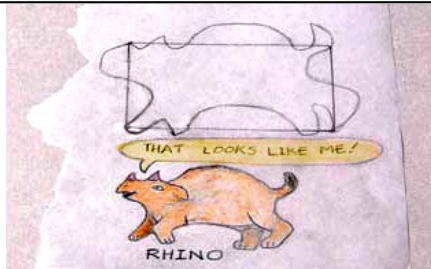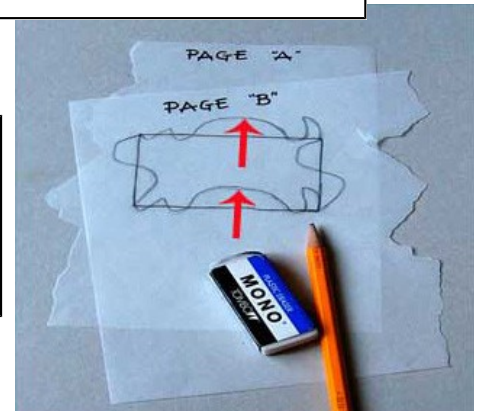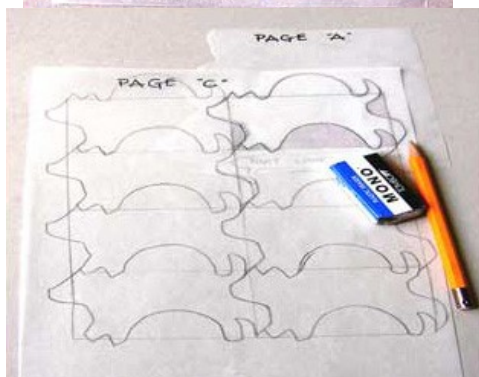Step 2: Copy the exact squiggly line on the right of the rectangle

Step 4: Copy the exact squiggly lines on the top of the shape. Start looking what it may look like…

It may look like an animal e.g. a rhino or a cat! It may look like a fish or a shoe, etc.

Step 5: Cut out your final shape. This will be the template you use for your tessellation.

Step 7: Outline in ink, rub out the pencil lines, put in some detail, color in, decorate and bring to the next lesson!

Step 6: Copy the template in pencil on a piece of paper, several times, so you can see the pattern forming.