

## Homework for Lesson № 20

**1** Write expressions to solve the word problems.

**A.** Little Joe can paint 2 plates in  $\frac{1}{3}$  of an hour.  
How many plates can he paint in 1 hour?

\_\_\_\_\_

$$\frac{2 \text{ pl.}}{\frac{1}{3} h} \text{ — pl./h}$$

**B.** Little Joe can paint 2 plates in  $\frac{1}{3}$  of an hour.  
How many plates can he paint in  $x$  hours?

\_\_\_\_\_

$$\frac{2 \text{ pl.}}{\frac{1}{3} h} \cdot x \text{ — pl./h}$$

**C.** Little Joe can paint  $w$  plates in  $\frac{1}{3}$  of an hour.  
How many plates can he paint in 3 hours?

\_\_\_\_\_

$$\frac{w \text{ pl.}}{\frac{1}{3} h} \cdot 3 h \text{ — pl./h}$$

**D.** Little Joe can paint 2 plates in  $\frac{1}{3}$  of an hour.  
How long will it take him to paint 12 plates?

\_\_\_\_\_

$$\frac{2 \text{ pl.}}{\frac{1}{3} h} \cdot 12 \text{ pl.} \text{ — pl./h}$$

**E.** Little Joe can paint 2 plates in  $\frac{1}{3}$  of an hour.  
How long will it take him to paint  $w$  plates?

\_\_\_\_\_

$$\frac{2 \text{ pl.}}{\frac{1}{3} h} \cdot w \text{ — pl./h}$$

**F.** Little Joe can paint  $x$  plates in  $\frac{1}{3}$  of an hour.  
How long will it take him to paint  $w$  plates?

\_\_\_\_\_

$$\frac{x \text{ pl.}}{\frac{1}{3} h} \cdot w \text{ — pl./h}$$

2 Do in your notebook and copy your answers here:

a).  $2608 \div 8 = \underline{\hspace{2cm}}$        $3660 \div 4 = \underline{\hspace{2cm}}$   
 $74 \times 11 = \underline{\hspace{2cm}}$        $56 \times 48 = \underline{\hspace{2cm}}$

b). Determine the order of operation in the “left side” expressions **AND** make all necessary **drawings** when solving these equations:

$$92 - x : 4 = 78$$

$$(w + 3) \cdot 8 = 32$$

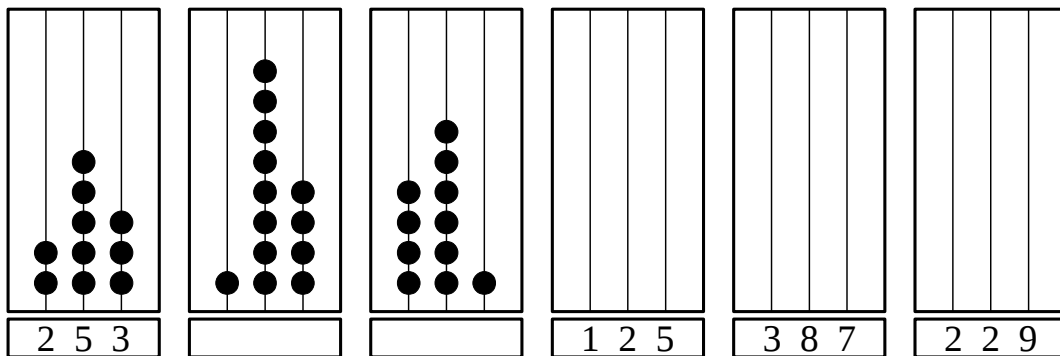
$$81 - 27 : y = 72$$

$$x = \underline{\hspace{2cm}}$$

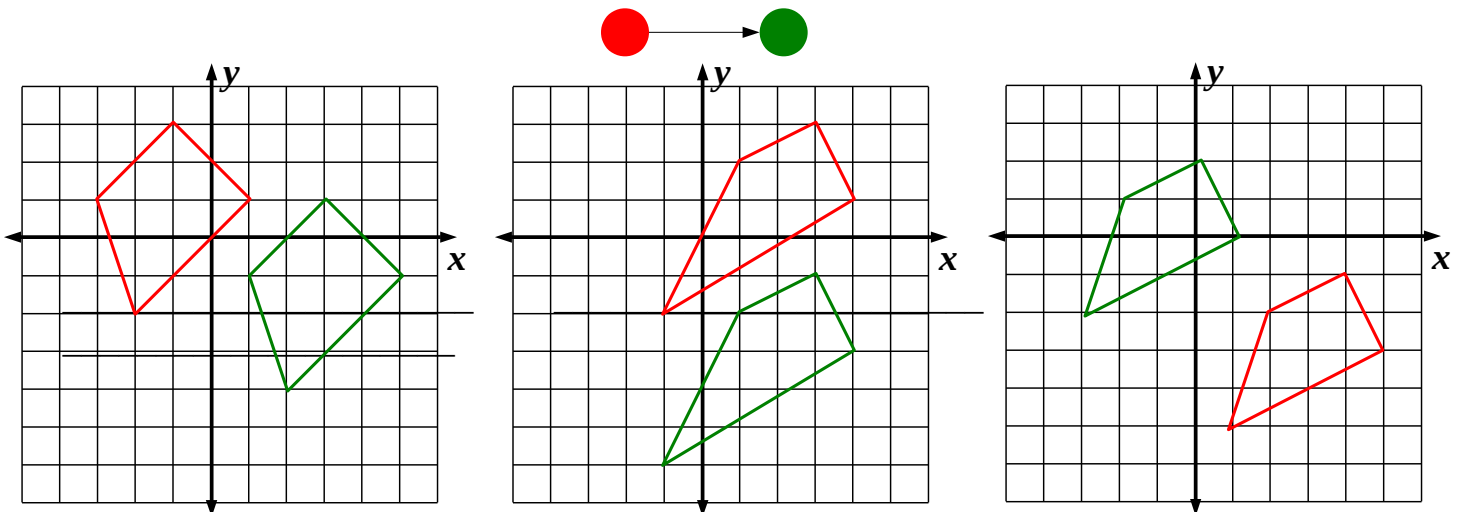
$$w = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

3 Fill in the missing numbers and complete the drawings:

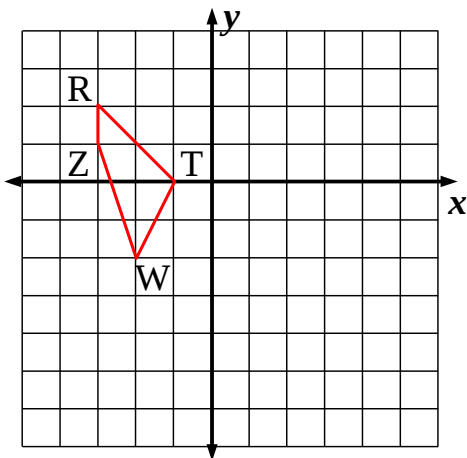


3 Write a rule to describe translation of each red shape towards its green image. Indicate the translation with an appropriate arrow on each drawing.

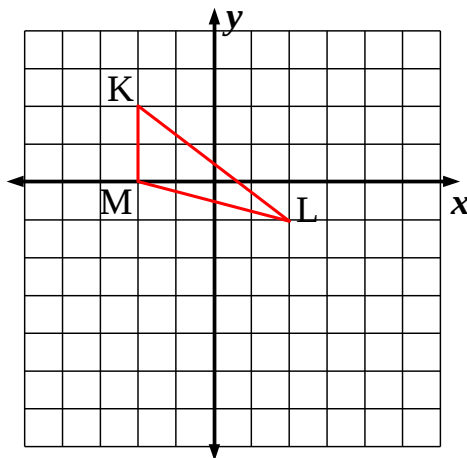


**4** Transform the following shapes according to the rules:

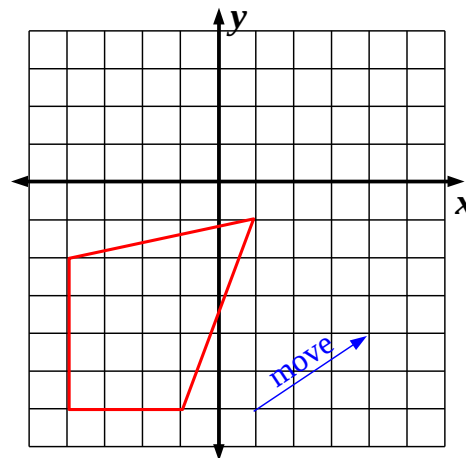
4 units  $\rightarrow$



2 unit  $\rightarrow$  3 units  $\downarrow$



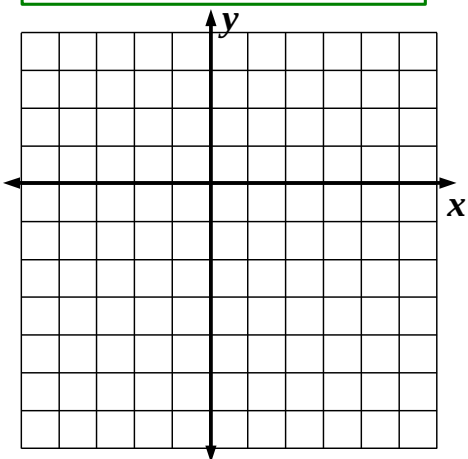
Blue arrow



**5** Plot each shape and then translate it.

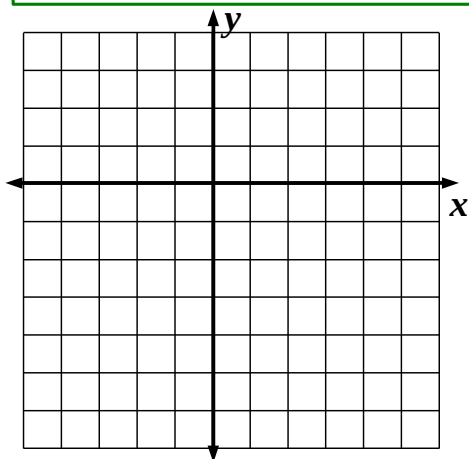
$A(-2,2); B(-1, -3); C(-3, -1)$

Move: 5 units  $\rightarrow$ , 3 units  $\downarrow$



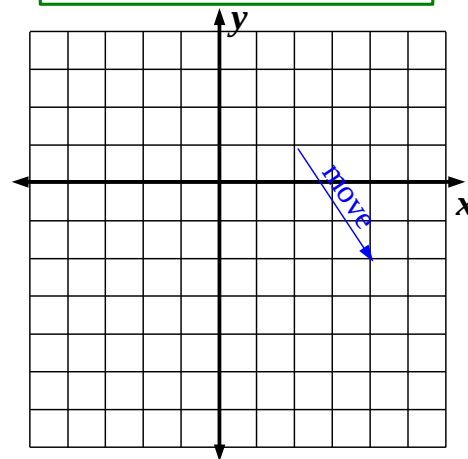
$A(1,2); B(2, -4); C(0, -3); D(-1,0)$

Move: 3 units  $\leftarrow$ , 1 unit  $\uparrow$



$A(0,2); B(3, -3); C(-2, -1)$

Move: see blue arrow



**6** The coordinates of the vertexes of triangle  $\triangle AJN$  are  $A(-1, 0); J(-1, -2); N(3,-3)$ . Its translation 2 units  $\leftarrow$  and 1 units  $\uparrow$  produces  $\triangle A'J'N'$ .

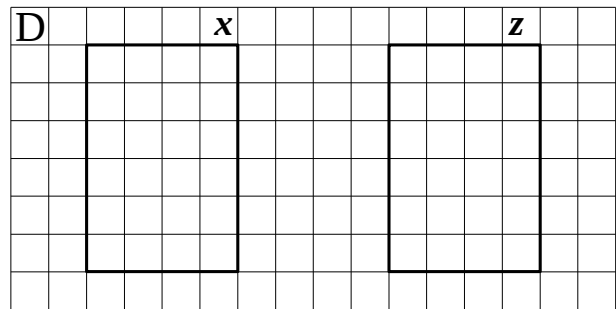
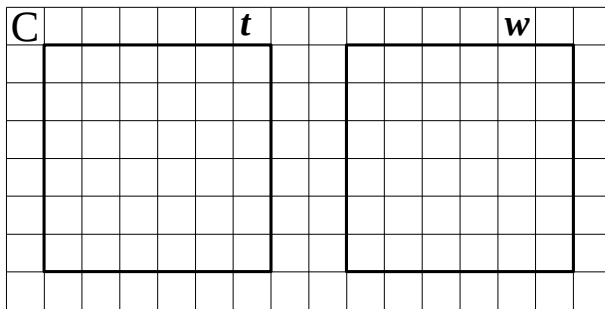
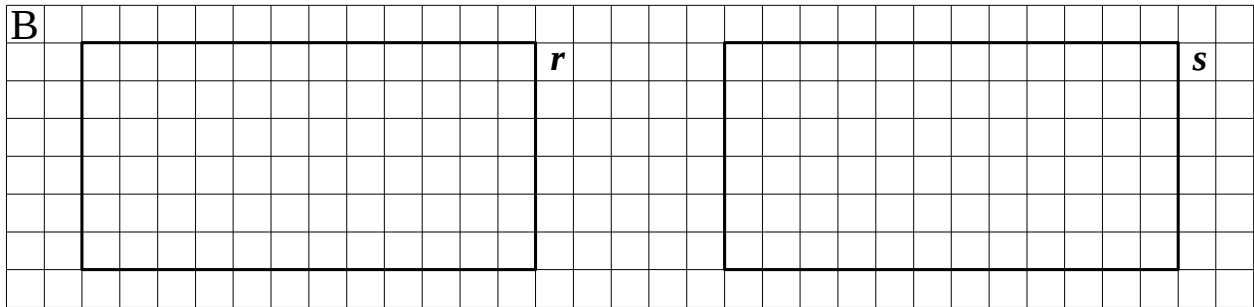
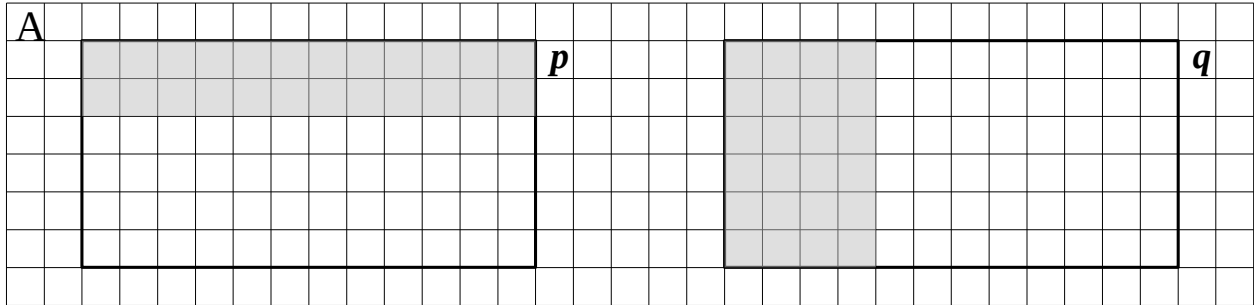
$$A(-1, 0) \rightarrow A'(\_, \_)$$

$$J(-1, -2) \rightarrow J'(\_, \_)$$

$$N(3,-3) \rightarrow N'(\_, \_)$$

7

## Fractions of areas.



Measure the sides of the rectangles *p*, *q*, *r*, *s* in centimeters. Calculate their areas in square centimeters (cm<sup>2</sup>) and in cells:

$$p = q = r = s = \quad \text{cm}^2 = \quad \text{cells}$$

$$1 \text{ cm}^2 = \quad \text{cells}$$

$$1 \text{ cell} = \quad \text{cm}^2$$

Gray stripes represent  $\frac{1}{3}$  of rectangles *p* and *q*. Find the areas of each gray strip in cm<sup>2</sup> and in cells.

$$\frac{1}{3} \times 72 =$$

$$\frac{1}{3} \times 18 =$$

Split rectangle *r* into 6 equal parts by horizontal lines and rectangle *s* into 6 equal parts by the vertical lines.

$$\frac{1}{6} \times 72 =$$

$$\frac{1}{6} \times 18 =$$

Split rectangles *t* and *w* in 4 equal parts in two different ways  $\frac{1}{4} \times 36 =$

Split rectangles *x* and *z* in 2 equal parts in two different ways  $\frac{1}{2} \times 24 =$

**8** Calculate:

$1 : 4 =$

$1 : 3 =$

$1 : 6 =$

$1 : p =$

$1 : \frac{1}{4} =$

$1 : \frac{1}{3} =$

$1 : \frac{1}{6} =$

$1 : \frac{1}{p} =$

$\frac{1}{4} \times 4 =$

$\frac{1}{3} \times 3 =$

$\frac{1}{6} \times 6 =$

$\frac{1}{p} \times p =$

$4 \times \frac{1}{4} =$

$3 \times \frac{1}{3} =$

$6 \times \frac{1}{6} =$

$p \times \frac{1}{p} =$

$\frac{1}{4} \times \frac{1}{4} =$

$\frac{1}{3} \times \frac{1}{3} =$

$\frac{1}{6} \times \frac{1}{6} =$

$\frac{1}{4} : 4 =$

$\frac{1}{3} : 3 =$

$\frac{1}{6} : 6 =$

$\frac{1}{4} : \frac{1}{4} =$

$\frac{1}{3} : \frac{1}{3} =$

$\frac{1}{6} : \frac{1}{6} =$

$\frac{1}{p} : \frac{1}{p} =$

**9** Transform fractions:

$\frac{1}{3} = \frac{\quad}{12}$

$\frac{1}{2} = \frac{\quad}{8}$

$\frac{1}{7} = \frac{\quad}{28}$

$\frac{1}{5} = \frac{\quad}{25}$

$\frac{1}{2} = \frac{\quad}{4}$

$\frac{3}{15} = \frac{\quad}{5}$

$\frac{4}{32} = \frac{\quad}{8}$

$\frac{3}{21} = \frac{\quad}{1}$

$\frac{2}{10} = \frac{\quad}{1}$

$\frac{3}{9} = \frac{\quad}{-}$

**10** Calculate:

$55 \times \frac{1}{11} =$

$20 \times \frac{1}{5} =$

$21 \times \frac{1}{7} =$

$54 \times \frac{1}{9} =$

$32 \times \frac{1}{8} =$

$32 \times \frac{1}{4} =$

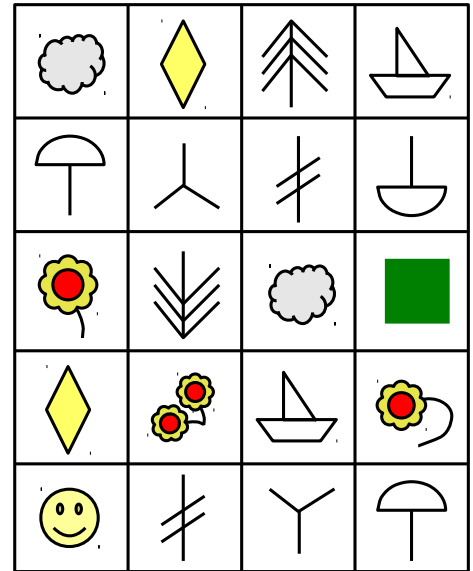
$18 \times \frac{1}{6} =$

$27 \times \frac{1}{3} =$

**11** Calculate:

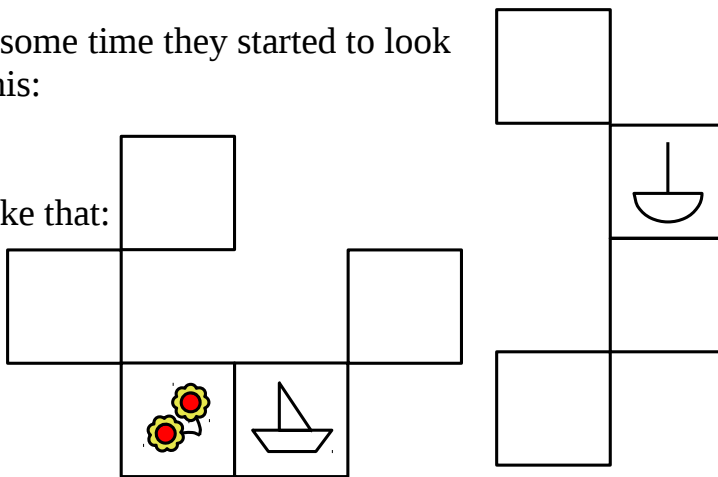
|              |                 |              |                 |
|--------------|-----------------|--------------|-----------------|
| $1 + 3 =$    | $1 + (-3) =$    | $1 - 3 =$    | $1 - (-3) =$    |
| $(-1) + 3 =$ | $(-1) + (-3) =$ | $(-1) - 3 =$ | $(-1) - (-3) =$ |
| $(-4) + 2 =$ | $(-4) + (-2) =$ | $(-4) - 2 =$ | $(-4) - (-2) =$ |

**12** When LJ was just a little mouse he liked to chew on everything. His mom had several rugs around the house looking like this:

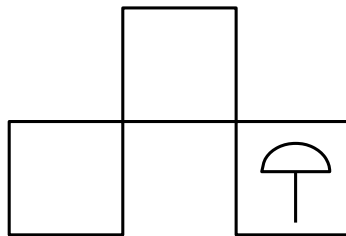


After some time they started to look like this:

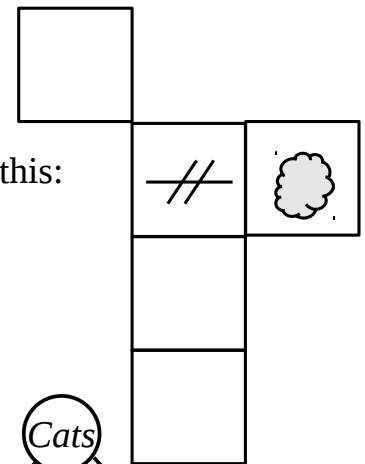
Or like that:



Or like that:



Or like this:



**Reconstruct the original drawings from the blanks squares.**

**13\*** Remember that the cats from the West part of the Island always tell the truth; the cats from the East of the Island always lie? One day, LJ overheard a white cat saying to an orange cat:

“At least one of us is telling the truth”.

“You are a liar” was the response.

Which part of the Island were they from? White \_\_\_\_\_ Orange \_\_\_\_\_

