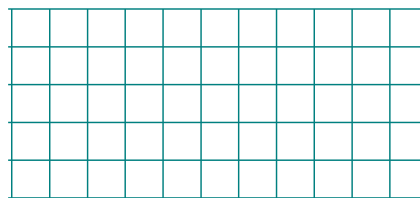


## Lesson № 21

## 1 Solve the word problems

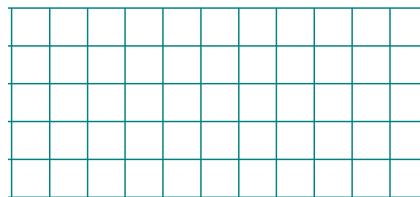
**A.** Hannah bought desserts at the bakery. She bought  $a$  cupcakes that cost \$2 each and  $d$  cookies that cost  $b$  dollars each. If she ate  $w$  cookies, how much money did she spend?

\_\_\_\_\_



**B.** Henry earns  $e$  dollars for mowing a lawn and four times as much for washing a car. How much money would Henry make if he mowed 6 lawns and washed 3 cars?

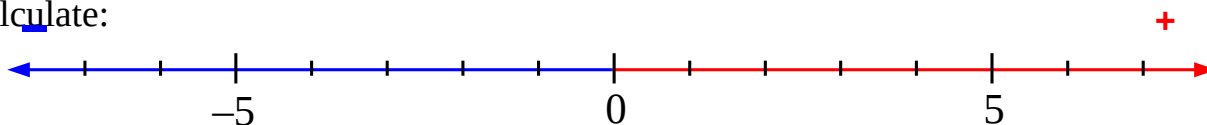
\_\_\_\_\_



**C.** There are several books on a shelf.  $H$  books have 239 pages each and  $K$  books have 537 pages each. How many pages these books have in total?

\_\_\_\_\_

## 2 Calculate:



$6 + 4 =$

$6 + (-4) =$

$6 - 4 =$

$6 - (-4) =$

$(-1) + 3 =$

$(-1) + (-3) =$

$(-1) - 3 =$

$(-1) - (-3) =$

## 3

Do the arithmetics with “magic numbers” that are plotted on the “magic number line”



$\Lambda + 1 =$

$\Lambda + (-1) =$

$\Sigma + (-2) =$

$\Pi + \underline{\quad} = \Theta$

$\Omega - \Lambda =$

$\Lambda - \Omega =$

**4** Study the numbers in set  $Q = \{ 36, 142, 281, 29, 4589, 220\}$ . Finish the statements making them correct.

All these numbers \_\_\_\_\_

Some of these numbers are not \_\_\_\_\_

At least one of these numbers \_\_\_\_\_

None of these numbers \_\_\_\_\_

**Egyptian Numbers:**

The ancient Egyptians wrote numbers using symbols, or hieroglyphics. The symbols for numbers are shown in the table.

Number	Symbol	Description
1		Vertical stroke
10	∩	Heel bone
100	☉	Scroll
1000	🌸	Lotus flower
10,000	☞	Pointing finger
100,000	🐟	Fish
1,000,000	🧎	Kneeling person

To write a number in ancient Egyptian symbols, you write down the right number of symbols.

**5** Write in Egyptian:

529 =                      63 =                      4,402 =

**Example: 4023**

🌸🌸🌸🌸

∩∩

|||

**OR**

🐟🐟🐟🐟 ∩∩ |||

**6** Write in Arabic:

∩∩∩    🐟🐟🐟 ☉                      🧎🧎🧎🧎🧎🧎 =

∩∩∩∩∩🐟🐟🐟    ☉☉                      🧎🧎🧎🧎☉☉☉ =

7

Calculate:

$1 : \frac{1}{2} = 1 \times \square =$

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

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

$4 : \frac{1}{2} = 4 \times \square =$

$7 : \frac{1}{3} = 7 \times \square =$

$9 : \frac{1}{4} = 9 \times \square =$

Dividing a whole number into a fraction  $\frac{1}{n}$   
is equivalent to multiplying this number by  $n$ :

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

This is true if  $p$  is a fraction as well!

8

Calculate:

$\frac{1}{6} : \frac{1}{5} = \frac{1}{6} \times \square =$

$\frac{1}{7} : \frac{1}{2} = \frac{1}{7} \times \square =$


$\frac{1}{9} : \frac{1}{4} = \frac{1}{9} \times \square =$

9

Solve the equations below. Use rectangle diagrams for help.


$$x \times \frac{1}{3} = 4$$

$$x = 4 : \frac{1}{3}$$

$$x =$$



$$x : \frac{1}{5} = 2$$

$$x =$$

$$x =$$




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

$$x =$$


10

Alice is younger than Lisa.

Bob is older than Cole.

Julie is older than Lisa.

Lisa is younger than Cole.

Bob is older than Julie.


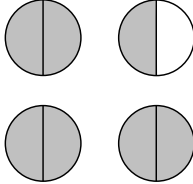



Which of the kids is the youngest? \_\_\_\_\_

Whose ages cannot be compared? \_\_\_\_\_

11

**Proper, Improper, Mixed Fractions.**

Proper fractions	Improper fractions	Mixed fractions
Its factor is smaller than its denominator.	Its factor is larger than its denominator.	A combination of a whole number and a proper fraction.
Examples: $\frac{2}{7}$ $\frac{4}{5}$ $\frac{2}{3}$	Examples: $\frac{7}{2}$ $\frac{5}{4}$ $\frac{3}{2}$	Examples: $3\frac{1}{2}$ $1\frac{1}{4}$ $1\frac{1}{2}$
		

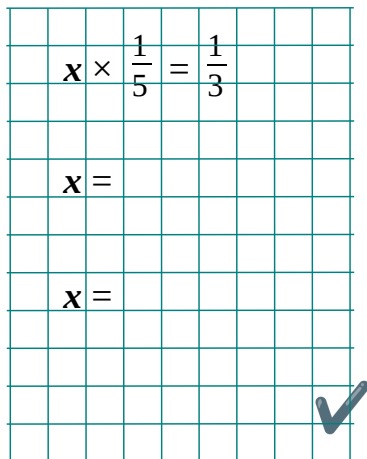
12

Solve the equations. Use the help of rectangle diagrams.

$x \times \frac{1}{5} = \frac{1}{3}$

$x =$

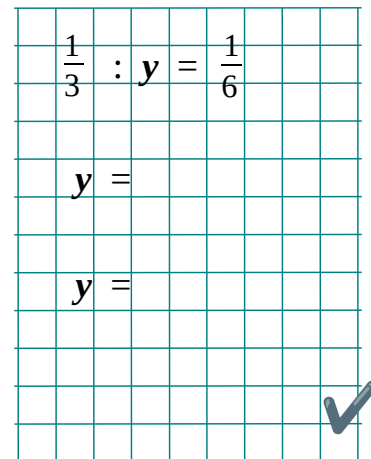
$x =$




$\frac{1}{3} : y = \frac{1}{6}$

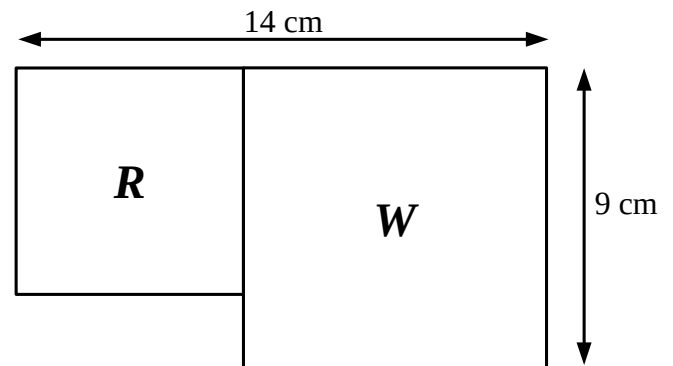
$y =$

$y =$



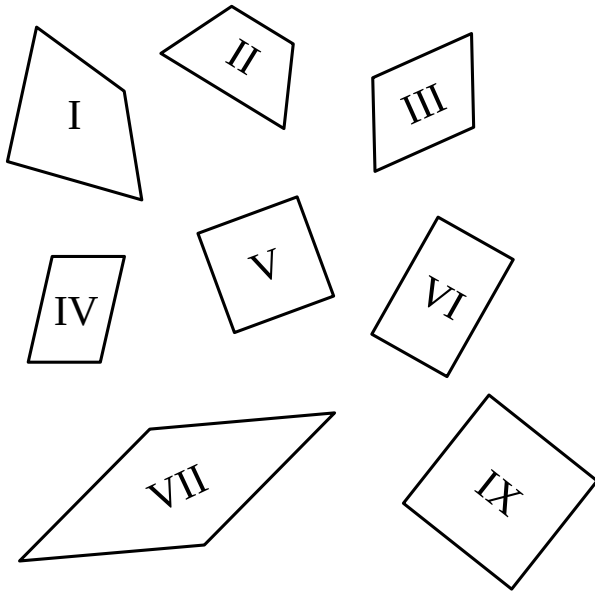
13

The shape is made out of two squares. Find the area of the smaller square.

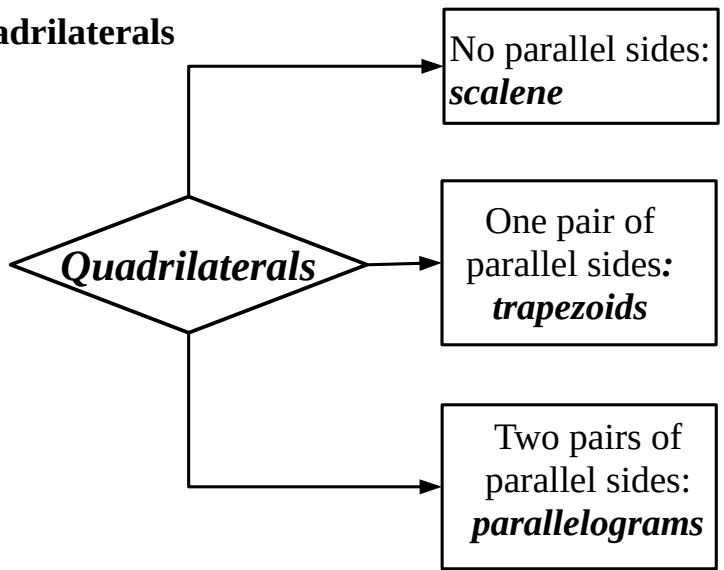


Look at different quadrilaterals. What is the difference between quadrilaterals I and II?

**Quadrilaterals are classified by number of pairs of parallel sides.**



**Quadrilaterals**



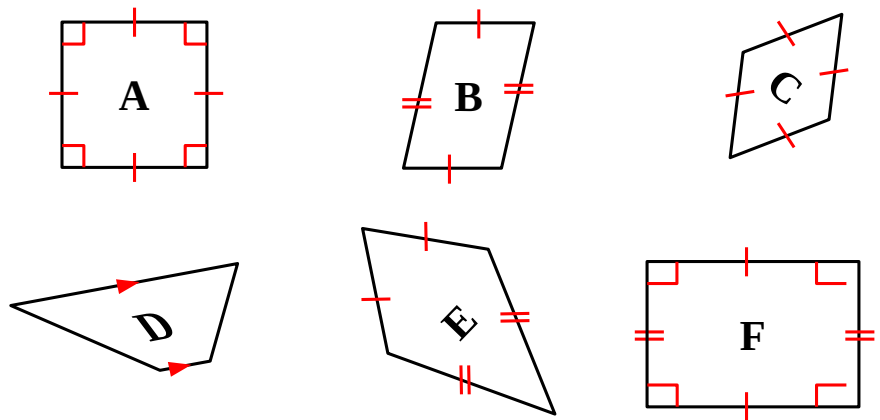
**Also:**

A parallelogram with all right angles is called a **rectangle**;

A parallelogram with all equal sides is called a **rhombus**;

A rectangle with all equal sides is called a **square**.

**14** State all possible names for each figure below



**15** Check ✓ the TRUE statements; cross mark ✗ the FALSE statements.

Any square is a parallelogram.

Any rectangle is a parallelogram.

Any parallelogram is a square.

Any parallelogram is a rectangle.

**16** Which quadrilateral is described in each case below? Draw each one.

1. All sides equal; four right angles

---

2. Opposite sides equal; four right angles

---

3. Opposite sides parallel; no right angles

---

4. Exactly two sides parallel

---

5. Opposite sides equal; no sides perpendicular

---

6. Opposite sides parallel; adjacent sides perpendicular

---

7. All sides equal; no sides perpendicular

---

8. No sides parallel; no sides perpendicular

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