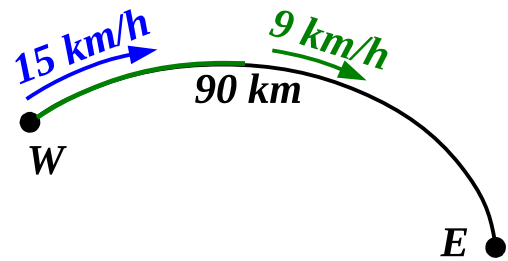


Lesson № 25

1

Explain the expressions related to the story below.

East coast cats live **90 km** from the West coast cats. As usually, at noon a west coast messenger went to the east with his report biking **9 km/h**. Four hours later a second messenger went with an urgent report about a break into the Cheese Factory. He was driving a motorbike **15 km/h**.

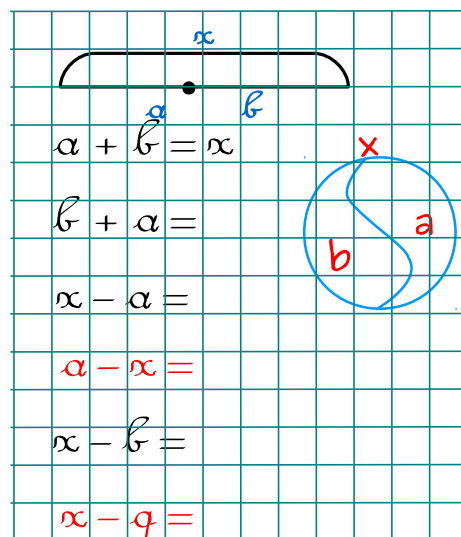
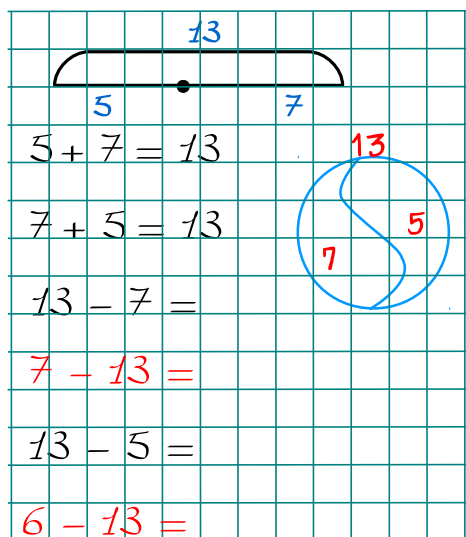


| | |
|-------------------------|--------------------|
| $90 : 9$ | How long ... _____ |
| $90 : 15$ | _____ |
| $15 + 9$ | _____ |
| $15 - 9$ | _____ |
| 9×4 | _____ |
| $90 - 9 \times 4$ | _____ |
| $(90 - 9 \times 4) : 9$ | _____ |
| $9 \times 4 : (15 - 9)$ | _____ |
| $12 + 4$ | _____ |
| $12 + 4 + 90 : 15$ | _____ |
| $12 + 90 : 9$ | _____ |

Which messenger will come to the east coast camp first?

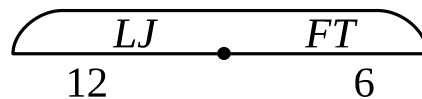


- 2 Analyze additional equalities with a whole and its parts.



- 3 Find nonsense and explain the calculations related to the story below.

Little Joe has collected 12 colorful cheese wrappers. Foxy Tail has collected 6 colorful wrappers.

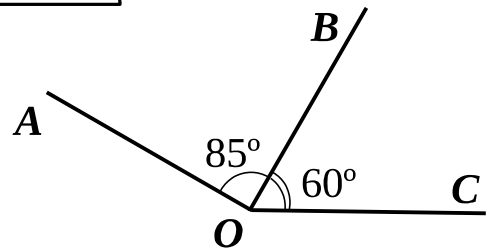
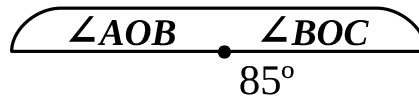


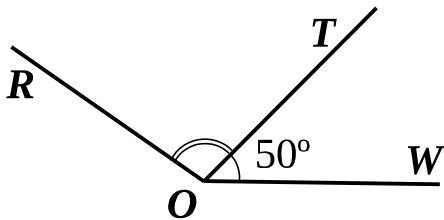
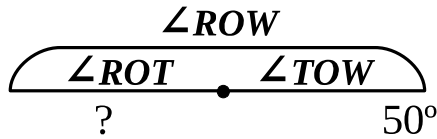
| | |
|------------------------|-------|
| $12 + 6 = 18$ | _____ |
| $12 \times 6 = 48$ | _____ |
| $12 : 6 = 2$ | _____ |
| $6 : 12 = \frac{1}{2}$ | _____ |
| $12 - 6$ | _____ |
| $6 - 12$ | _____ |

Statement “*FT has (-6) wrappers more*” means: _____

Statement “*FT has $\frac{1}{2}$ times more wrappers*” means: _____

4 A. Find the measure of angle $\angle AOC$ if $\angle AOB = 85^\circ$ and $\angle BOC = 60^\circ$.

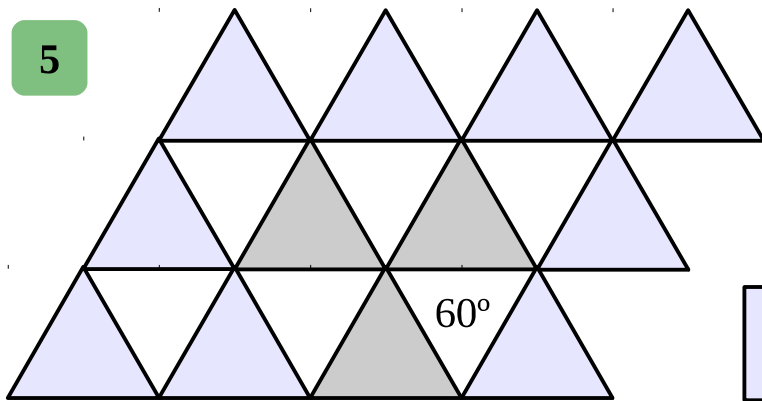




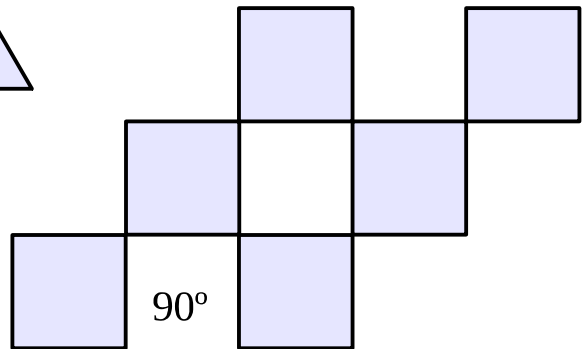
B. Find the measure of angle $\angle ROT$ if $\angle ROW = 155^\circ$ and $\angle TOW = 50^\circ$.

Paving Plane with Regular Polygons.

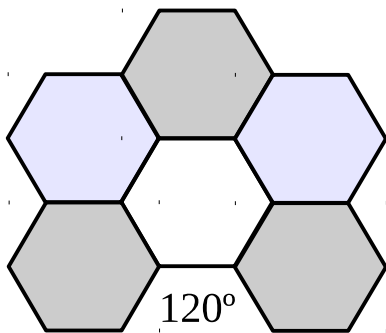
5



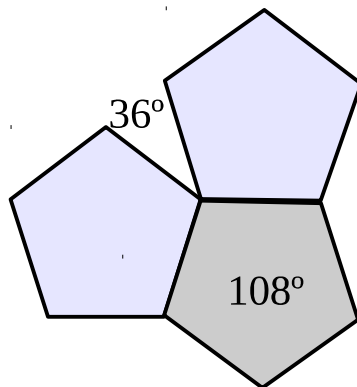
$360 : 60 = 6$



$360 : 90 = 4$



$360 : 120 = 3$

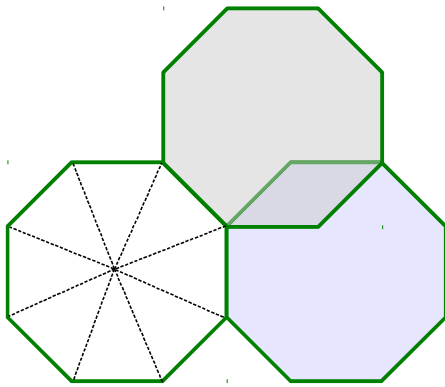


$360 : 108 = 3 \text{ rem } 36$

6 Find angle sums of a hexagon and an octagon.

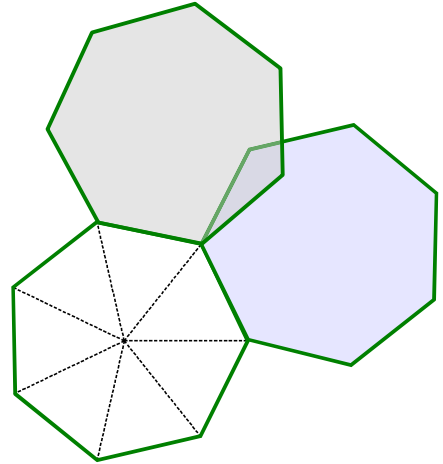
Angle sum of a heptagon: _____

An angle of a regular heptagon is : _____



Is it possible to pave a plane with heptagons?

Is it possible to pave a plane with octagons?



Angle sum of an octagon : _____

An angle of a regular octagon is : _____

7 Calculate:

$$\frac{5}{12} + \frac{7}{12} =$$

$$\frac{3}{7} - \frac{1}{7} =$$

$$1 - \frac{2}{9} =$$

$$\frac{11}{13} - \frac{2}{13} =$$

$$\frac{5}{11} - \frac{4}{11} =$$

$$1 - \frac{13}{15} =$$

$$1 - \frac{3}{17} =$$

$$\frac{7}{5} + \frac{3}{5} =$$

Present fraction as a quotient:

$$\frac{5}{7} = \square : \square$$

$$\frac{9}{5} = \square : \square$$

$$\frac{4}{11} = \square : \square$$

$$\frac{5}{2} = \square : \square$$

$$\frac{10}{5} = \square : \square =$$

$$\frac{12}{6} = \square : \square =$$

$$\frac{5}{7} = \square : \square =$$

$$\frac{5}{7} = \square : \square$$

=

$$\frac{1}{6} = \frac{\square}{12}$$

$$\frac{1}{5} = \frac{\square}{15}$$

$$\frac{1}{\square} = \frac{3}{6}$$

$$\frac{\square}{\square} = \frac{7}{21}$$

Dividing a whole number into $1/n$.

8

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

$$3 : \frac{1}{2} =$$

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

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

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

$$2 : \frac{1}{3} =$$

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

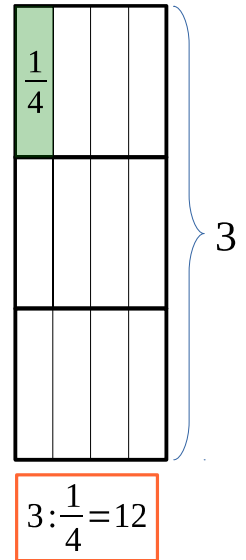
$$5 : \frac{1}{3} =$$

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

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

$$3 : \frac{1}{5} =$$

$$4 : \frac{1}{5} =$$



9

Fill in the blanks:

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

$$3 : \frac{1}{5} = 3 \times \square =$$

$$5 : \frac{1}{3} = 5 \times \square =$$

$$9 : \frac{1}{3} = 9 \times \square =$$

$$2 : \frac{1}{6} = 2 \times \square =$$

$$5 : \frac{1}{3} = 5 \times \square =$$

Conclusion:

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

10

Solve the word problems:

There are 24 hours in a day and scientists tell us that we should sleep for $\frac{3}{8}$ of the day. How much time should we spend sleeping?

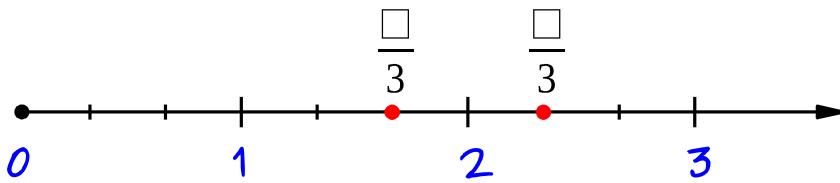
Little Joe has 5 kg of cheese. Greedy Rat steals $\frac{1}{2}$ kg of cheese a day. How many days will the cheese last?

JM broke $\frac{1}{2}$ of the four shovels the brothers had. How many shovels remained?

11

Division with remainder and mixed fractions.

A. Which fractions are marked on the number line?



B. Compare the results of divisions with remainder and into fractions:

$$5 : 3 = \frac{\square}{\square} = 1 \frac{\square}{\square}$$

$$5 : 3 = \square \text{ rem } \square$$

$$7 : 3 = \frac{\square}{\square} = 2 \frac{\square}{\square}$$

$$7 : 3 = \square \text{ rem } \square$$

C. Convert improper fractions into mixed numbers:

$$\frac{5}{3} = 1 \frac{\square}{\square}$$

$$\frac{7}{4} = 1 \frac{\square}{\square}$$

$$\frac{9}{5} = 1 \frac{\square}{\square}$$

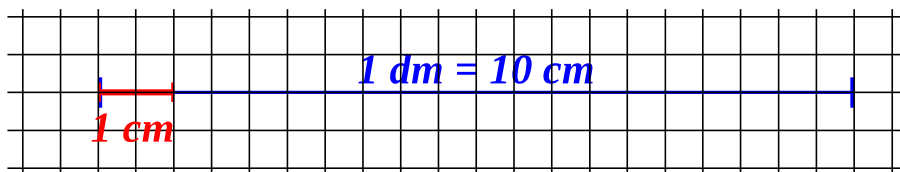
$$\frac{11}{2} = \square \frac{\square}{\square}$$

$$\frac{23}{4} = \square \frac{\square}{\square}$$

$$\frac{12}{7} = \square \frac{\square}{\square}$$

12

Convert the units:



$$1 \text{ cm} = \frac{1}{10} \text{ dm}$$

$$1 \text{ m} = 100 \text{ cm}$$

$$1 \text{ kg} = 1000 \text{ g}$$

$$1 \text{ m} = 10 \text{ dm}$$

$$1 \text{ h} = 60 \text{ min}$$

$$1 \text{ cm} = \quad \text{m}$$

$$1 \text{ g} = \quad \text{kg}$$

$$1 \text{ dm} = \quad \text{m}$$

$$1 \text{ min} = \quad \text{h}$$

$$37 \text{ cm} = \quad \text{m}$$

$$23 \text{ g} = \quad \text{kg}$$

$$3 \text{ dm} = \quad \text{m}$$

$$7 \text{ min} = \quad \text{h}$$

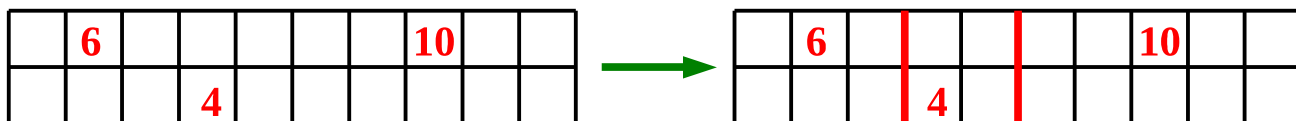
13 Once a year our mice are waiting for a very important guest: The Great-Grand Mother. They know The Great-Grand Mother likes when the whole floor in the mouse hole is covered with beautiful rugs. Rugs vary in size, but The Great-Grand-Ma requested that:

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

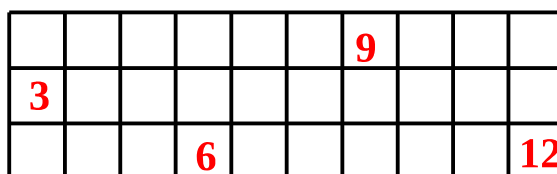
After her visit mice took rugs out and keep them in the dry cold place, where they are waiting for the next Great-Grand-Ma's visit. Each year it takes a lot of time to cover the floor with the rugs, so last year LJ came up with the idea – to write the size (area) of each rug on the floor. So next year it will be easier to put them back again.

But when mice started to prepare for Great-Grand-Ma next visit, they have realized that it is not as easy to put rugs back on their original places. Foxy Tail and Little Joe have been responsible for rugs this year.

Their job was easy in the first narrow corridor:

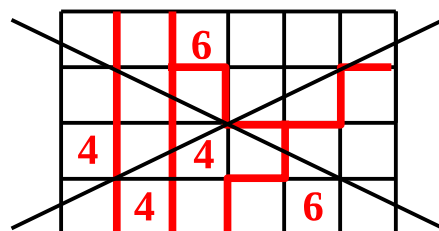
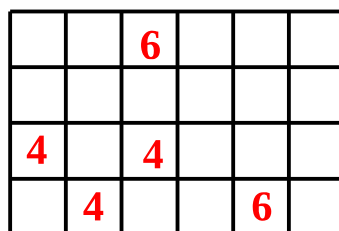


and not too hard in the second one:



But when they started to put rugs in the bedrooms, this task appeared to be more complicated....You remember the rules?

Can you help Little Joe and Foxy Tail in this room?



And in that one? (There are 2 solutions here!)

