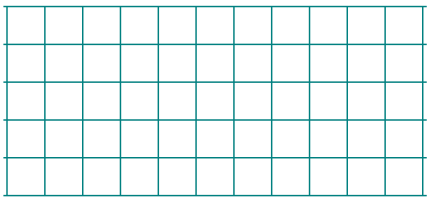
Lesson № 20

1 Solve the word problems

A. A typist needs to type 120 pages. She did ⅓ of this job. How many pages did she type?



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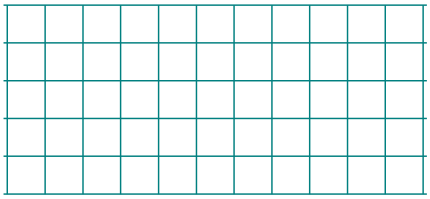
B. A typist needs to type 120 pages. She can do ⅓ of this job in 2 hours. How many pages does she type every hour?



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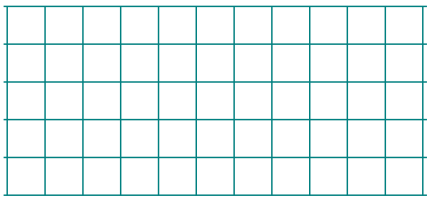
C. The distance between two villages is 80 km. A messenger can run ¼ of this distance in 2 hours. What is the speed of the messenger?



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D. There are 24 marbles in a bag. ⅙ of these marbles are red, ¼ of them are green, and the rest are orange. How many orange marbles are in the bag?

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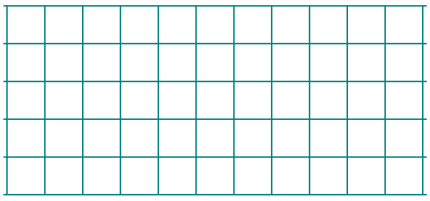
E. A worker accomplishes ⅑ of his job in 3 days. How long will it take him to complete the job?



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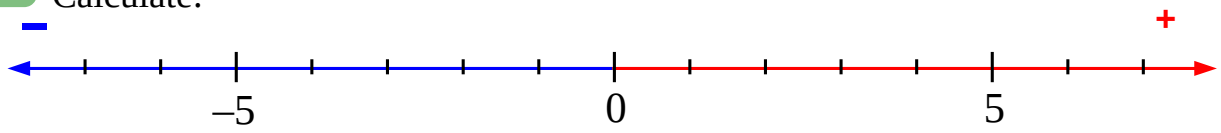
2 Calculate:



4 – 1 =	4 – (–1) =	4 + 1 =	4 + (–1) =
1 + 3 =	1 + (–3) =	1 – 3 =	1 – (–3) =

3 Make any necessary drawings to solve equations:

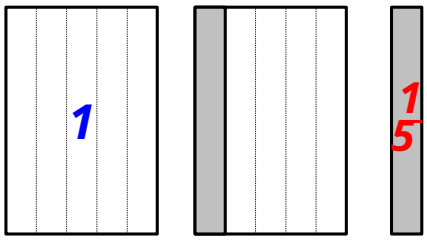
$60 - x \cdot 4 = 48$

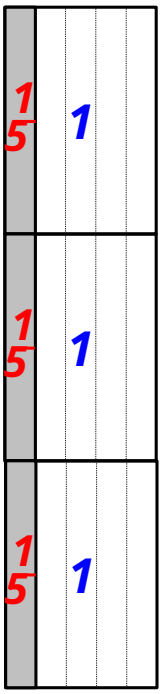
$(60 - x) \cdot 4 = 48$

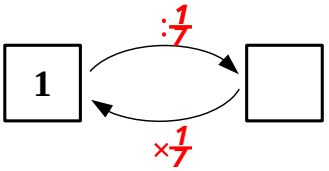
4 What inferences can you make looking at the picture below?

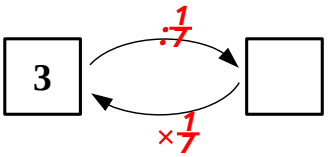
1. All mice like to eat books.
2. LJ likes to eat books.
3. LJ is interested in reading the books.
4. LJ is at home.
5. LJ is smiling.
6. There are mice that like to eat books.
7. Books are nutritious and tasty

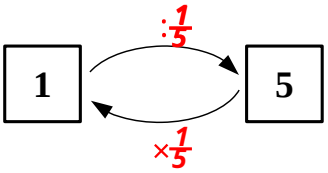
Dividing a whole number into a fraction.

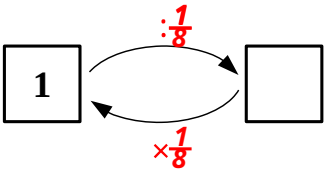


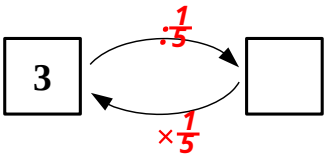


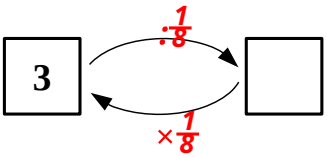












5 Calculate:

1 : $\frac{1}{3}$ = 2 : $\frac{1}{3}$ = 5 : $\frac{1}{3}$ = 7 : $\frac{1}{3}$ =

4 : $\frac{1}{11}$ = 11 : $\frac{1}{5}$ = 10 : $\frac{1}{7}$ = 14 : $\frac{1}{9}$ =

6

Denominators as units:

1 cm + 1 cm = 1 cm + 1 cm + 1 cm = 1 cm × 5 =

1 dm + 1 dm = 1 dm + 1 dm + 1 dm = 1 dm × 5 =

1 kg + 1 kg = 1 kg + 1 kg + 1 kg = 1 kg × 5 =

$\frac{1}{7} + \frac{1}{7}$ = $\frac{1}{7} + \frac{1}{7} + \frac{1}{7}$ = $\frac{1}{7}$ × 5 =

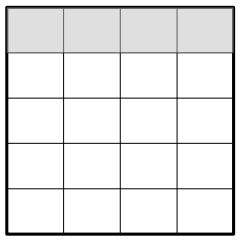
$\frac{1}{9} + \frac{1}{9}$ = $\frac{1}{9} + \frac{1}{9} + \frac{1}{9}$ = $\frac{1}{9}$ × 5 =

Dividing and Expanding Fractions.

Fractions can be divided further into even smaller equal parts.

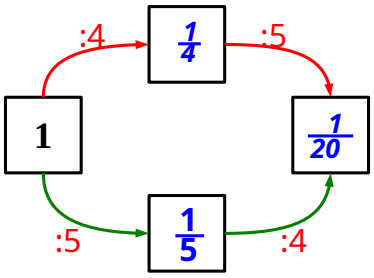
Finding $\frac{1}{n}$ of a fraction is equivalent to dividing this fraction into n equal parts.

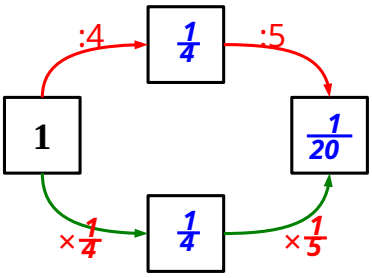
Dividing a fraction can be represented by dividing a whole in two opposite directions.



$\frac{1}{5}$

$\frac{1}{5} \times \frac{1}{4} = \frac{1}{20} = \frac{1}{4 \times 5}$





7 Calculate:

$\frac{1}{5} \times \frac{1}{8} =$ $\frac{1}{4} \times \frac{1}{3} =$ $\frac{1}{7} \times \frac{1}{7} =$ $\frac{1}{9} \times \frac{1}{2} =$

$\frac{1}{5} : 8 =$ $\frac{1}{4} : 3 =$ $\frac{1}{7} : 7 =$ $\frac{1}{9} : 2 =$

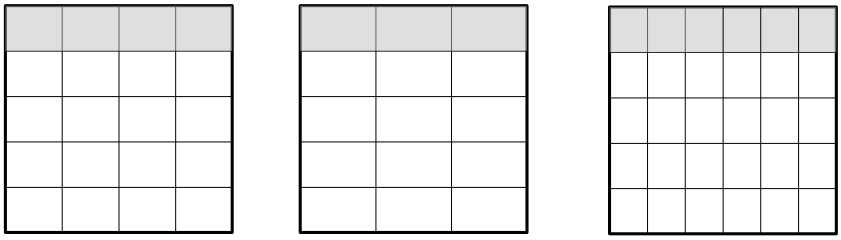
8 Using smaller fractions as new units is called expanding fractions.

Any fraction may be expanded in many different ways.

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

$\frac{1}{5} = \frac{}{10}$

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



$\frac{1}{5}$

$\frac{1}{5} = \frac{4}{20} = \frac{}{15} = \frac{}{30}$

$\frac{1}{6} = \frac{}{24}$ $\frac{1}{5} = \frac{}{20}$ $\frac{1}{7} = \frac{}{21}$ $\frac{1}{8} = \frac{}{32}$

9 Converting between hours minutes:

1 hour = ____ min

$\frac{1}{2}$ hour = ____ min

$\frac{1}{3}$ hour = ____ min

1 min = $\frac{1}{\quad}$ hour

2 min = $\frac{1}{\quad}$ hour

3 min = $\frac{1}{\quad}$ hour

$\frac{1}{4}$ hour = ____ min

$\frac{1}{5}$ hour = ____ min

$\frac{1}{6}$ hour = ____ min

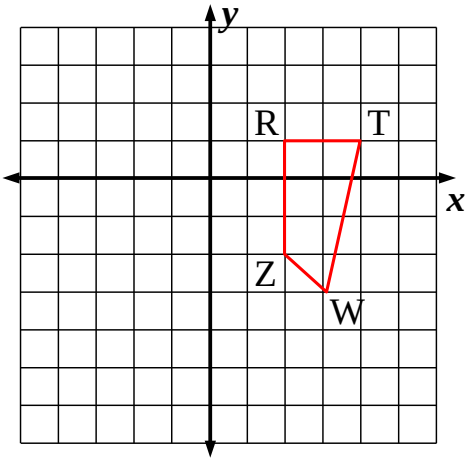
4 min = $\frac{1}{\quad}$ hour

5 min = $\frac{1}{\quad}$ hour

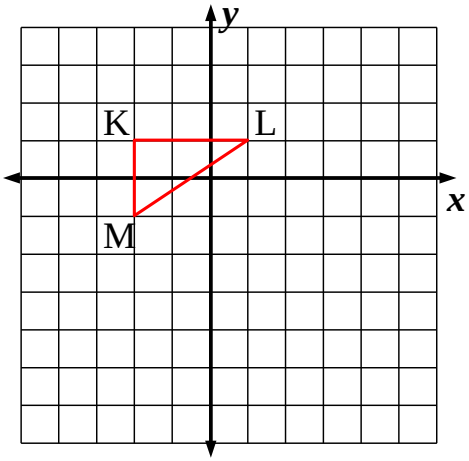
6 min = $\frac{1}{\quad}$ hour

10 Transform the following shapes according to these rules:

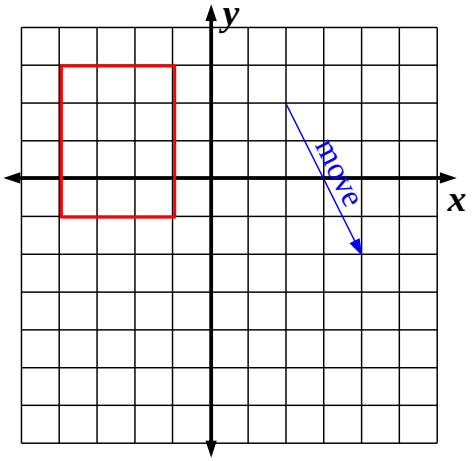
One unit left.



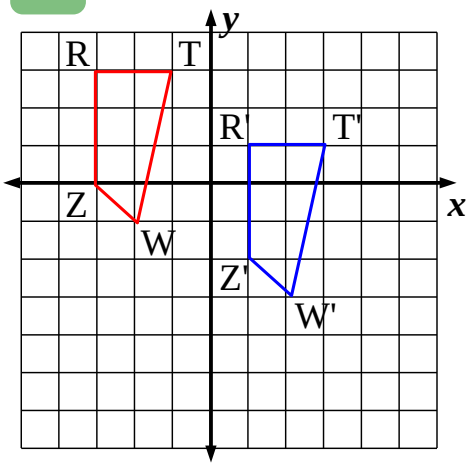
One unit right, two units down

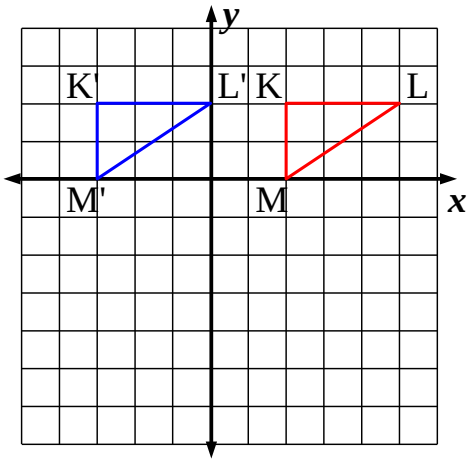


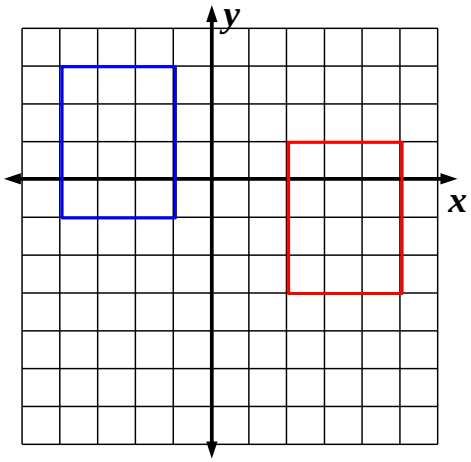
See the blue arrow.



11 Draw appropriate arrows and write the rules to translate the red shapes into blue.







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