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РАБОЧИЕ ТЕТРАДИ ПО МАТЕМАТИКЕ КАК СРЕДСТВО ОРГАНИЗАЦИИ САМОСТОЯТЕЛЬНОЙ РАБОТЫ УЧАЩИХСЯ

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WORKBOOKS IN MATHEMATICS AS A MEANS OF ORGANIZING INDEPENDENT WORK OF PUPILS

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В статье рассматривается использование рабочих тетрадей как инструмента в организации самостоятельной работы учащихся по математике. Использование рабочих тетрадей при организации самостоятельной работы открывает новые возможности и способствует повышению умственной активности школьников. Рабочие тетради играют важную роль в повторении изученных тем, формировании и укреплении новых знаний, их развитии и контроле знаний.

The article examines the use of workbooks as a tool in organising independent work of pupils in mathematics. The use of a workbook in the organization of independent work opens up new opportunities and helps to increase the mental activity of school-children. Workbooks play an important role in pupils' repetition of learned topics, creation of new knowledges, strengthening and development them, formation of percieved knowledge and their control.

Ключевые слова: самостоятельное обучение, рабочая тетрадь, числитель, знаменатель, дробь, доля, сравнение

Key words: independent work, workbook, numerator, denominator, fraction, part

The organization of independent work in mathematics is a pedagogical process that depends primarily on the pupil and the teacher. This, in turns, requires the teacher to develop independent tasks. It is necessary for the teacher to create the pupil's understanding of the subject being studied, to strengthen and develop it, as well as to increase the pupil's interest in subject at the same time as forming the ability to use it in daily life. It is in such situations appropriate to use workbooks to organize independent work in mathematics. It is required that the components of the workbooks consist of a set of questions and assignments aimed at developing the above goals, and these are as follows:

- Questions and tasks that create an understanding at the topic
- Questions and tasks that serve the strengthen the topic

- Questions and tasks that develop knowledge
- Practical applied issues

The use of workbooks compiled in the above order for organizing independent work in mathematics also serves the following:

– To increase the pupil's interest in subject
– To learn new concepts easily
– To visualize the studied concept (through drawings and pictures)
– To strngthen knowledge
– To form conscious knowledge
– To develop knowledge
– To apply the learned concept to everyday life
– To control the acquired knowledge
– To evaluate and motivate the pupil
– The pupils to research, even if it is small
– The pupils work with additional literature
– Partially independent study of topics
– To save pupils' time

Below we give an example of using a workbook as a tool for organizing independent work on the topic «Parts and simple fractions».

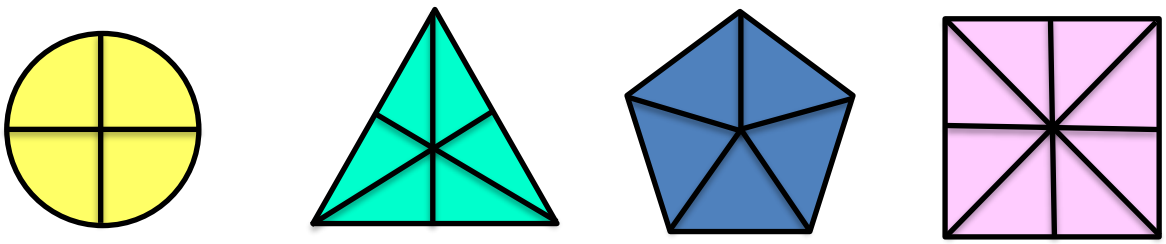
I. Examples that form the concept of parts and simple fractions

1.Explain the concept:

The denominator of the fraction is –_____

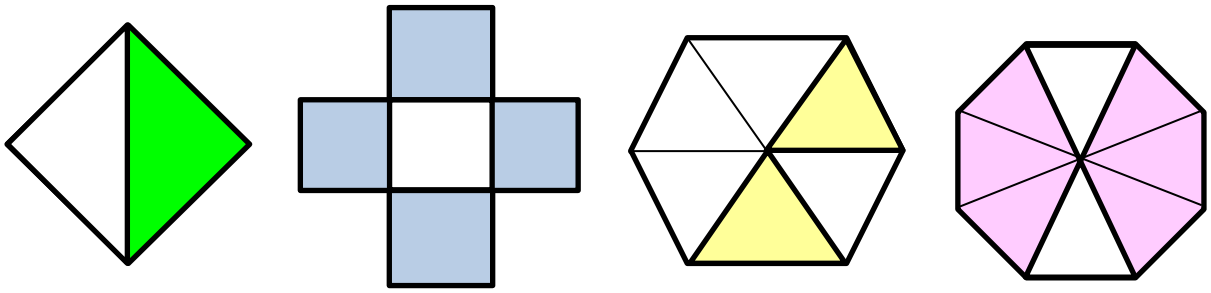
The numerator of the fraction is –_____

2. The figure shown in the picture is divided into equal parts. What part of the whole figure does each of these parts make up?



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

3. The figure shown in the picture is divided into equal parts. What parts of these shapes are painted?



$\frac{1}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$

4. Express as a simple fraction:

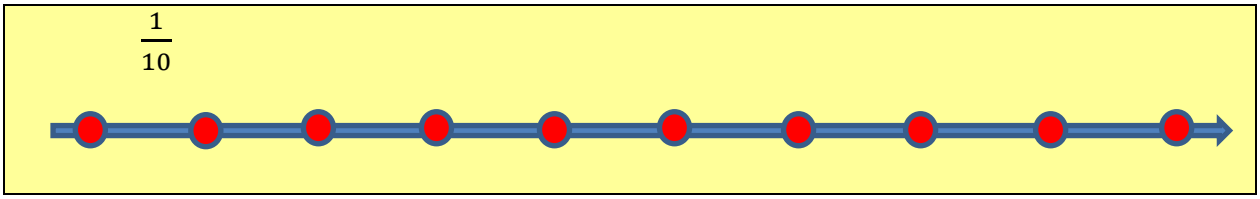
a) two thirds	$\frac{2}{3}$	e) seven ninths	$\frac{\square}{\square}$
b)five sevenths	$\frac{\square}{\square}$	f) five sixths	$\frac{\square}{\square}$
d) four tenths	$\frac{\square}{\square\square}$	g) eight elevenths	$\frac{\square}{\square\square}$

II. Examples that reinforce knowledge

5. Read the common fraction. Explain what the numerator and denominator of a fraction mean and represent the fractions on the number line:

Instruction : Take each interval as $\frac{1}{10}$.

$\frac{1}{10}$, $\frac{3}{10}$, $\frac{5}{10}$, $\frac{7}{10}$, $\frac{8}{10}$



6. Write as a simple fraction:

a) What part of the number 137 is 254? $\frac{137}{254}$

b) What part of the number 7491 is 9736 $\frac{\square\square\square\square}{\square\square\square\square}$

d) What part of the number 647 is 890 $\frac{\square\square\square}{\square\square\square}$

e) What part of the number 54 is 79 $\frac{\square\square}{\square\square}$

7.Calculate the following:

Example: Let's find $\frac{2}{5}$ of 15, for this we first find $\frac{1}{5}$ of 15 $15:5=3$. This is the sum of 2 parts $2\cdot 3=6$. Answer: 6

$a)$ $\frac{1}{6}$ of 18

$b)$ $\frac{2}{3}$ of 12

$c)$ $\frac{3}{5}$ of 25

$d)$ $\frac{5}{9}$ of 36

III. Developing problems

8. The publisher must produce 1,200 books per hour.

a) How many books does it produce in half an hour?.

b) 300 books constitute what part of the work

9. The pupil should read 30 pages of books in 1 day in order to be successful in the future. If the pupil has read 5/6 of the specified amount, how many more pages should he read??

10. The tourist going from Tashkent to the Kokand traveled 100 km. If this is 5/14 of the road, how many more kilometers should the tourist travel?

IV. Practical application problems

11. The scientist said: «My height is 10/6000 km, and my weight is 2/50 tons». Do you think he is wrong? Justify your answer.

The use of a workbook opens up new possibilities and contributes to the activation of the mental activity of older students. Workbooks are designed to play an important role in organizing the independent work of students both at the stage of mastering and consolidating new material, and at the stage of repeating the material covered. Another advantage of using a workbook is that it allows more rational and economical use of study time, since at the same time students are exempted, in particular, from the need to rewrite the text of tasks and can more focus on completing assigned tasks. It should

be noted that in Currently, unfortunately, many teachers do not use in their activities workbooks.

Thus, it can be argued that the workbook is actually a teaching aid, which has its own special didactic apparatus, which contributes to the independent work of the student in mastering new material both in the classroom and at home. It can also be fruitfully used by students in preparation for tests and at the same time contribute to the formation of practical skills.

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МЕТОД ЗАМЕНЫ ПРИ РЕШЕНИИ ВОЗВРАТНЫХ УРАВНЕНИЙ

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REPLACEMENT METHOD FOR SOLVING RETURN EQUATIONS

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В статье рассматривается один из способов реализации метода замены переменной при решении возвратных уравнений. Даны определения возвратных уравнений четвертой и пятой степени. Приведены конкретные примеры решения уравнений данного вида.

The article discusses one of the ways to implement the variable replacement method – the solution of return equations. Definitions of the return equations of the fourth and fifth degree are given. Specific examples of solving equations of this type are given.

Ключевые слова: метод замены переменной; возвратные уравнения; симметрические уравнения

Key word: ariable replacement method; return equations; symmetric equations