

Math 4. Homework 6.



1. Write the following numbers as products of their prime factors:

a). 1001

b). 2002

c). 24024 (divisible by 24)

2. Set  $A = \{a, h, k, 4, 7, 9\}$ , set  $B = \{4, a, 9, l, p, 7\}$

Write the set  $C = A \cap B$ , and the set  $D = A \cup B$

3. Find LCM and GCD of ...

a). 15 and 12;

b). 10 and 40; show these using Venn Diagrams

c). 27 and 15;

d). 16 and 25 - show these using Venn Diagrams



4. A city and its fortress were founded 800 years ago. During  $\frac{1}{5}$  of that time the fortress was built. How many years did it take to build this fortress?



5. Find  $x$ ,  $y$  and  $z$ , which satisfy all three relations below?

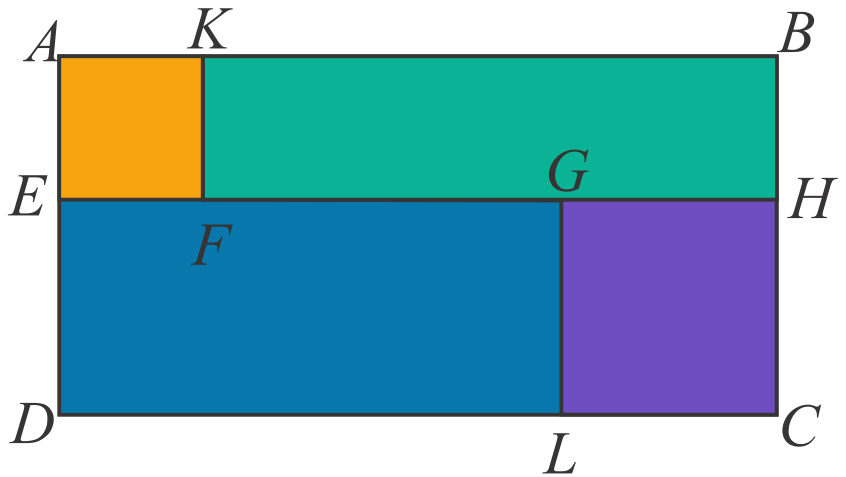
$$x + x = 8$$

$$x - y = 1$$

$$y + y = z$$

6. On a straight line 4 points are marked. Point C is located between points A and B. Point D is located between points C and B. Which segment is shorter:
- AB or CD
  - AD or AC
  - CD or CB?

7. Find the area of the rectangle ABCD, if area of square AKFE is  $4\text{cm}^2$ , area of the square LGHC is  $9\text{cm}^2$ , points E, F, G, H are on the same straight line, length of the segment FG is 5cm.



8. At a bus stop, there are three bus lines. One of them has buses running every 3 minutes, the other has buses running every 5 minutes, and the third one, every 7 minutes. At noon, the buses for all three lines meet at the stop. When will the same thing happen next time?

9.  $S_{16}$  is set of multiples of 16 less than 100.  $S_{12}$  is a set of multiples of 12 less than 100. Write a set definition using curly brackets  $\{ \}$ , Draw Venn diagram for  $S_{12}$  and  $S_{16}$ .

10. Make an auxiliary **drawing** to construct an **equation** needed to solve a word problem:

Four friends, Pichu, Pikachu, Tepig, and Oshawott went trick or treating. Oshawott collected 50 more candies than Pichu, Pikachu 50 less, and Tepig got 2 times more candies than Pichu. When they got together and put all candies in one jar, the number was 250.



*How many candies each one collected?*

