

Math 4a. Homework 24.



Problems marked with * are more difficult.

1. Show on a number line the solution of the following inequalities:

Example:

$$2x \geq 10$$

$$x \geq 5$$



- a. $2x \leq 100$;
 - b. $\frac{1}{2}y > -50$;
 - c. $2g \geq \frac{1}{2}$;
 - d. $-5w < 10$
1. * "Give me \$100 and I will be twice as rich as you are" said Mr. X to Mr. Y. Mr Y answered to Mr. X: "Give me only \$10 and I will become 6 time as rich as you are." How many dollars did each of them have?
 2. A very special island is inhabited only by knights and knaves. Knights always tell the truth, and knaves always lie.
You meet two inhabitants: Zoey and Mel. Zoey tells you that Mel is a knave. Mel says, "Neither Zoey nor I are knaves."
Can you determine who is a knight and who is a knave?
 3. A yard of a rectangular shape with dimensions of 54 and 48 m should be fenced. In order to do this a number of poles should be put equidistantly. What is the minimal number of poles?
 4. There are less than 100 books on the shelf. How many books are there on the shelf if they can be packed into packages of 3, 4, or 5 books?

5. $A = \{2, 3, 8\}$

$B = \{2, 3, 8, 11\}$

$C = \{2, 5, 11\}$

Find

a. $A \cap B = \{ \quad \quad \quad \}$, $A \cap C = \{ \quad \quad \quad \}$, $B \cap C = \{ \quad \quad \quad \}$

b. $A \cup B = \{ \quad \quad \quad \}$, $A \cup C = \{ \quad \quad \quad \}$, $B \cup C = \{ \quad \quad \quad \}$

c. $A \cup B \cup C = \{ \quad \quad \quad \}$, $A \cap B \cap C = \{ \quad \quad \quad \}$

6. Jake has \$28 more than Peter. $\frac{1}{3}$ of Jake's money is equal to $\frac{4}{5}$ th of Peter's money. Find Jake's money.