

## Accelerated math. Homework 7



Problems marked with \* are more difficult.

1. Compute:

$$\text{a)} \left(\frac{5}{6} - \frac{2}{3}\right) : \frac{8}{9}; \quad \text{e)} \frac{2}{3} : \left(\frac{2}{5} + \frac{4}{15}\right); \quad \text{i)} 10 : \frac{2}{5} - \frac{3}{10}; \quad \text{j)} \left(1\frac{1}{2} + \frac{3}{8}\right) : 3.$$

$$\text{b)} \left(1 - \frac{1}{2}\right) : \left(\frac{1}{2} - \frac{1}{3}\right); \quad \text{f)} \left(\frac{1}{3} + \frac{1}{4}\right) : \left(2 - \frac{5}{6}\right); \quad \text{k)} \left(\frac{1}{2} + \frac{1}{4} - \frac{2}{5}\right) : \frac{4}{5}.$$

$$\text{c)} \left(\frac{3}{4} + \frac{1}{6}\right) \cdot 3 + \left(\frac{5}{6} - \frac{1}{2}\right) : \frac{2}{9}; \quad \text{g)} \left(1\frac{1}{5} + 2\frac{3}{10}\right) : \frac{1}{2} + \left(6\frac{3}{4} - 2\frac{2}{3}\right) : 1\frac{1}{6}.$$

$$\text{d)} \left(\frac{7}{15} + \frac{7}{30} + \frac{4}{5}\right) : \left(2 - \frac{1}{3} - \frac{1}{2}\right);$$

2. Compute:

$$(-5 + 8) + 9, \quad -75 - (-75 + 8), \quad (14 - 18) - 7, \quad 96 - (-72 + 13)$$

3. Compute by the convenient way:

$$350 \cdot 46 + 250 \cdot 46,$$

$$728 \cdot 49 - 528 \cdot 49$$

$$52 \cdot 100 - 52 \cdot 99,$$

$$99 \cdot 48 + 1 \cdot 48$$

4. A swimming pool can be filled up through three pipes. If all three pipes are fully open pool will be filled up in 4 hours, if only the first pipe open time of the filling up the pool is 10 hours, if only the second one is open, pool can be filled in 15 hours. How many hours needed to fill up the pool through only the third pipe.

5. \*You need to cut  $\frac{1}{2}$  m from a rope  $\frac{2}{3}$  m long. You don't have any tools to do the measurements. How you can do it?

6. Numbers  $a$  and  $b$  represented as a product of prime factors. Find GCD (GCF) and LCM for numbers  $a$  and  $b$ .

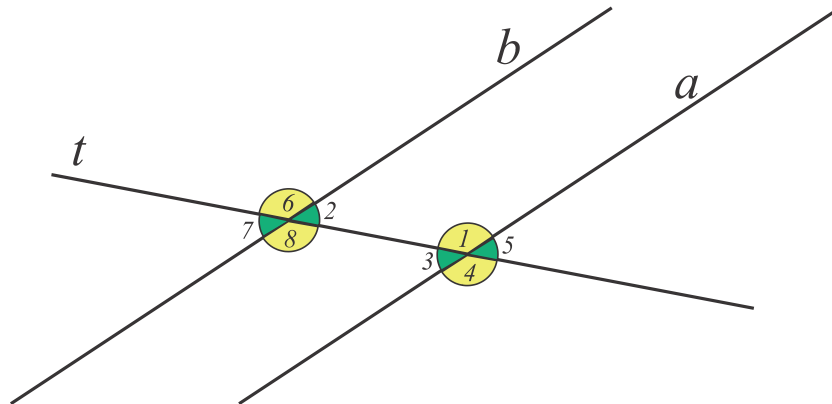
$$1) a = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 5 \cdot 7, \quad b = 2 \cdot 3 \cdot 3 \cdot 5 \cdot 5 \cdot 11;$$

$$2) a = 2 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 13, \quad b = 2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 \cdot 7;$$

$$3) a = 2 \cdot 3 \cdot 7, \quad b = 2 \cdot 2 \cdot 5 \cdot 7, \quad c = 2 \cdot 5 \cdot 5 \cdot 7 \cdot 19;$$

$$4) a = 3 \cdot 3 \cdot 5 \cdot 7, \quad b = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5, \quad c = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 17.$$

7. \* On the picture below, lines  $a$  and  $b$  are parallel. Prove, that the angle 7 is equal to the angle 5.



8. Solve the following equations:

a.  $c \cdot 6 = 4$

f.  $|x| = 7$

b.  $\frac{1}{3} - a = \frac{1}{9}$

g.  $|b| = 10$

c.  $x + \frac{1}{3} = \frac{5}{6}$

h.  $|x + 1| = 10$

i.  $|2x| = 10$

d.  $y:8 = \frac{1}{10}$

e.  $b - \frac{1}{8} = \frac{1}{4}$

9. Write the absolute values of coordinates of points in the picture below.

Example:

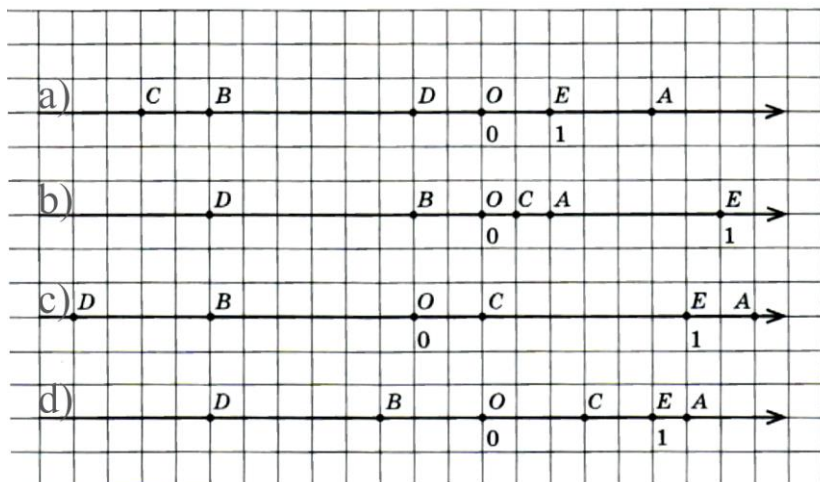
a)  $O: |0| = 0, \quad E: |1| = 1,$

$A: \left|2\frac{1}{2}\right| = 2\frac{1}{2}$

$D: |-1| = 1,$

$B: |-4| = 4$

$C: |-5| = 5$



10. Find the third angle of the triangle below.

