

Math 4a. Homework 18.



Problems marked with * are more difficult.

1. Compute by the most convenient way:
 - a. $5.1 + 8.4 - (-5.1) - 10.2 - (+8.4) - 9.8 - (15)$;
 - b. $-7.81 + 9.64 - 5.32 - (+7.81) + (5.32) - 9.64$;
 - c. $13.4 + 8.22 - (+1.3) - (-4.78) + (-8) - 10 - 3.4$
 - d. $-21 + (-0.68) - (-7.4) + (-3.2) - (+6.8) + 21.68$;
 - e. $-48 + 51 \div 10 + 4.8 \cdot 10 + (-6.4) - 51 - (-7.2) - (+3)$;
 - f. $93 + 8.23 \cdot 10 - (-9.6) + (-82.3) + 9.3 \cdot (-10) - (+0.4)$;
 - g. $2.4 \div (-2) - 3.8 - (-5.9) - (+6.2) + 1.2 + 4.1$;
 - h. $-(-7.7) + (-8.1) \div 9 + 0.9 - (+1.4) + 15.4 \div 2 - (-8.2)$;

2. A man is 2.5 times older than his son and 2 times younger than his father. How many times is the grandfather older than his grandson?

3. The distance between two cities is 165 km. Two cars, which started moving toward each other from the two cities at the same time meet after 1.5 hour at the rest area, which is 90 km from the city A. What is the speed of each car?

4. For preparing raspberry jam you need to take 3 parts of sugar for each 2 parts of raspberries. How much sugar do you need to prepare jam from 6 kg of raspberries? 2 kg 800g of raspberries? How much raspberries did grandma use if she used 4 kg 800 g of sugar to cook the jam?

5. 6 friends always go for lunch together. They decided to sit around the table in different way each day. In how many days will they repeat their sitting pattern?

6. How many three digit numbers can be composed from digits 0, 1, 2, 3 if
 - a. repetition of digit is allowed
 - b. repetition of digit is not allowed?

7. Compute:

a. $-3 + \left(-1\frac{1}{5}\right)$;

b. $-3\frac{8}{19} + \left(-1\frac{11}{19}\right)$;

c. $-7\frac{1}{3} + \left(-1\frac{2}{3}\right)$;

d. $-4\frac{2}{3} + \left(-1\frac{1}{3}\right)$;

e. $-12\frac{5}{7} + \left(-4\frac{4}{7}\right)$;

f. $\left(-8\frac{2}{3}\right) + \left(-9\frac{2}{3}\right)$;



8. A musketeer has three beautiful hats, four elegant tabards, and two pairs of excellent boots. How many different costumes can he wear?

(tabard - a sleeveless jerkin consisting only of front and back pieces with a hole for the head.)

9. There are 10 green and 5 red pencils in the box. Which is the smallest number of the pencils you have to take out of the box, to be sure that you have 2 green pencils? 2 red pencils? 2 pencils of different color? 2 pencils of the same color?

10. Evaluate the following expression:

a. $\left(-\frac{3}{4}\right)^3$;

b. $\left(-\frac{1}{2}\right)^5$;

c. $\left(-\frac{2}{3}\right)^4$;

d. $\left(-\frac{4}{5}\right)^3$;