Math 5c, homework 11.

1. In how many different ways the first three places can be awarded, if 15 people participated in the competition? (Order is important).

2. How many different ways are there to create a team of 3 students out of 15 students of math class to take a participation in the math Olympiad.

3. Mother has 2 apples and 3 pears. Each day she gives one fruit to her kid for lunch. How many different orders are there to give these fruits?

4. How many grams of jam with 50% sugar should be added to 100 g of jam with 30% sugar in order to obtain jam with 35% sugar?

5. $x, y,$ and k are three different digits. If all six three-digit numbers that can be created from these digits without repetition are added together, the result will be 5328. What are the digits?

6. The ratio of boys to girls in 6^{th} grade is $\frac{9}{11}$. The ratio of girls to boys in 7^{th} grade is $\frac{31}{29}$. There are 100 and 120 students in 6^{th} and 7^{th} grades correspondingly, what is a ratio of boys to girls at the dance for 6 and 7 grade students, if all students came to the dance?

7. Simplify the expression:
$$(x^2 + y^2 + x + y)(x + y + xy) =$$
8. Solve the equations:
$$|2x - 8| = 10;$$