Math 4a. Homework 2.

Problems marked with * are more difficult.

1. In the number 5 236 845 cross out three digits so that the resulting number will be
   a. Biggest possible number
   b. Smallest possible number

2. Students who participated in math competition had to solve 2 problems, one in algebra and another in geometry. Among 100 students 65 solved algebra problem, 45 solved geometry problem, 20 students solved both problems. How many students didn't solve any problem at all?

3. Solve the problems:
   a. There are 54 rose bushes in a garden. Peter watered a half of all bushes, Ann watered also a half of all bushes. 3 rose bushes were watered twice. How many bushes Peter and Ann didn't water at all?

   b. *There are 54 rose bushes in a garden. Peter, Ann, and Robert watered $\frac{1}{3}$ of all bushes each. 3 rose bushes were watered three times, 6 rose bushes were watered twice. How many bushes Peter, Ann, and Robert didn't water at all?

4. On the diagrams of sets A, B, and C put 2 elements so that

   a. each set contains 2 elements
   b. set A contains 2 elements, set B contains also 2 elements, and set C contains 1 element.
   c. set A contains 2 elements, sets B and C contain 1 element each
   d. set A contains 2 elements, set B contains 1 element, and set C is an empty set
   e. set A contains 2 elements, set B contains 2 elements, and set C is an empty set
   f. each set contains 1 element

a)  b)  c)

d)  e)  f)
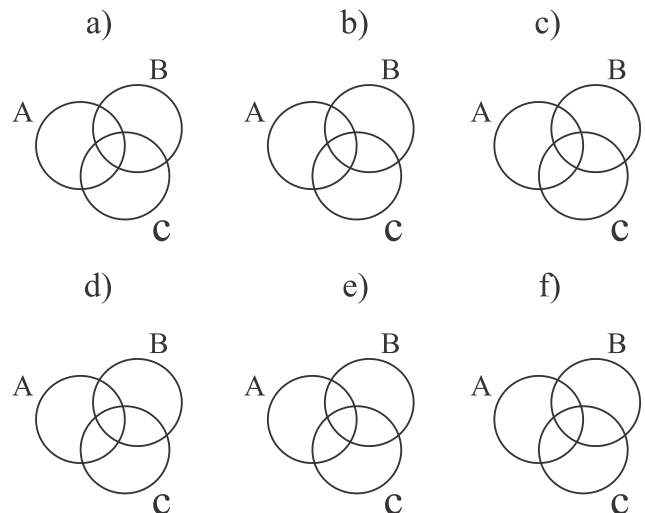
5. Rebecca wants to decorate the box with a birthday present for her friend Alice with a ribbon as shown in the picture below. How long should the ribbon be if 90 cm should be left for the ends and the bow?

6. 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 $D = A \cup B$

7. 240 students from New-York and Seattle attended a math camp. Of the total number of students, 125 were boys. 65 boys were from New-York. There were 53 girls from Seattle. How many students came from New-York?

8. In 2 boxes there are 160 notebooks altogether. In one box there are 20 more notebooks than in the other. How many notebooks are there in each box?

9. The price of one kilogram of cookies is 12 dollars. What will be the cost of
   a. $\frac{1}{4}$ of a kilogram
   b. $\frac{2}{3}$ of a kilogram
   c. $\frac{3}{4}$ of a kilogram
   d. $\frac{7}{6}$ of a kilogram

10. Draw two rays AB and CD in such way that they intersect
    a. by a point
    b. by a segment
    c. by a ray
    d. don't intersect at all

11. On a line three points are marked (point M, point N and point O) so that the length of a segment $|MN| = 5\ cm$, the length of a segment $|NO| = 3\ cm$. What is the length of a segment $|MO|$? (be careful, look for all possible solutions).