1. A swimming pool can be filed with one pipe in 10 hours. Full pool can be drain out with another pipe in 20 hours. How long it will take to fill up the pool with opened drain pipe?

2. Two pipes fill together a pool in 1 h and 20 minutes. If the fist pipe is open for 10 minutes, and the second pipe is open for 12 minutes, the pool will be filled on $\frac{2}{15}$. How fast each pipe will fill the pool?

3. Solve the following equations (hint: use the property of proportions):

   $a.\ \frac{x}{7.2} = \frac{1\frac{1}{9}}{0.25}$; $b.\ \frac{2\frac{1}{3}}{0.6x} = \frac{2.5}{1\frac{2}{7}}$; $c.\ \frac{\frac{7}{12}}{0.14} = \frac{50x}{4.8}$; $d.\ \frac{1\frac{3}{17}}{13.75} = \frac{2\frac{2}{11}}{3x}$

4. There are 255 seats in a theater. 170 tickets were sold for a movie. Which percent of the total number of seats will be empty if only 90% of the people, who bought tickets will show up for the movie?

5. Parliament elections were held on Fruit Island. Everyone who voted for the Tangerine party love tangerines. Of those who voted for other parties, 90% do not like tangerines. How many percent of the votes did the Tangerine party got, if it is known that exactly 46% of the islanders love tangerines?

6. A few consecutive natural numbers are written on the board. Exactly 52% of them are even. How many even numbers are written on the board?

7. Fill the table:

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
2^x											
$\left(\frac{1}{2}\right)^x$											

8. Represent the followimg expressions as an exponent with base 2:
   Example:

$$\left(\frac{16^n}{16^{2n}}\right)^2 = \left(\frac{1}{16^n}\right)^2 = \frac{1}{16^{2n}} = \frac{1}{(2^4)^{2n}} = \frac{1}{2^{8n}} = 2^{-8n}$$

   $a.\ 4^x \cdot 4^y$; $b.\ 8^x : 8^y$; $c.\ \left(\left(\frac{1}{4}\right)^x\right)^y$; $d.\ 4^{-n} \cdot 4^{2n}$; $e.\ ((0.25)^{-2})^n$

9. Simplify the expressions:

   $a.\ m^3 \cdot m^2 + m \cdot m^4$;

   $b.\ (2mn^2)^3 + 3m^2n^6m$;

   $c.\ 2x \cdot xy - 3x^2 \cdot \frac{1}{2}y$;

   $d.\ b.\ (3x^2y^4)^3 + 7x^4y^3 \cdot \frac{1}{14}x^2y^9$

10. Draw three arbitrary triangles. In the first one draw medians, in the second one, draw bisectors, in the third triangle draw altitudes.

11. Copy the figure (use compass and ruler):