

Math 4. Homework #13.



1. Valentina and Joshua each wanted to buy an ice cream. However, Joshua was 5 cents short and Valentina was 85 cents short (both ice creams cost the same). The kids decided to pool their money together and buy one ice cream to share. Strangely, they still were 5 cents short! What is the price of one ice cream?

2. Peter spent 2 hours doing his homework. $\frac{1}{3}$ of this time, he spent doing his math homework and $\frac{1}{4}$ of the remaining time he spent on the history assignment. How many minutes did Peter spent on his history assignment and how many minutes did he spent doing his math homework?

3. **Solve the problem:**
 - a. $\frac{1}{7}$ of all students in the class is 4. How many students are there in the class?

 - b. $\frac{2}{5}$ of all students in a class is 10. How many students are there in a class?

4. **Compare:**
 - a. What is bigger, the number c or $\frac{2}{3}$ of the number c ? Why?

 - b. What is bigger, the number b or $\frac{3}{2}$ of the number b ? Why?

 - c. What is bigger, $\frac{3}{4}$ of a number m or $\frac{4}{3}$ of a number m ? Why?

5. If it is 7am now, what time of the day will it be in ...
 - (a) ... 27 hours?

(b) ... 127 hours?

(c) ... 11043 hours?

6. There are 4 children in the family. They are 5, 8, 13, and 15 years old and their names are Julia, Peter, Mary and Ellen. What are their ages if one of the girls goes to kindergarten, Julia is older than Peter, and sum of ages of Julia and Mary is divisible by 3?

7. Make regular fractions from irregular:

(a) $\frac{29}{13}$

(b) $\frac{17}{5}$

(c) $\frac{49}{8}$

(d) $\frac{13}{3}$

8. Make irregular fractions from regular:

(a) $1\frac{1}{13}$

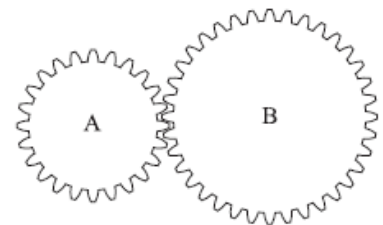
(b) $3\frac{3}{5}$

(c) $11\frac{5}{8}$

(d) $4\frac{2}{3}$

9. The picture shows two meshed gears, one with 24 teeth, the other with 36 teeth (thus, when you rotate the smaller gear by one tooth, i.e. by $\frac{1}{24}$ of a rotation, the larger is also rotated by one tooth, i.e. by $\frac{1}{36}$ of a rotation). How many times do you need to turn the smaller gear before the letters on both gears are again in upright position?

What if the larger gear had 40 teeth, not 36? [Hint: *In order for the letters to appear in upright position, the gears must make a full rotation, or several full rotations.*]



10. Person A always tells the truth and person B always lies.

What question should you ask each of them if you want to get the same answer? (You don't know who is who)

