

EXERCISES: DECIMAL NUMBERS

1. Is the corresponding decimal to the fraction $\frac{3}{106106777711}$ finite? And recurrent?
2. Find out the decimal expression of $\frac{1}{13}$ and the one of $\frac{26}{23}$.
3. Analyse which of the following fractions are equivalent to a decimal fraction. Find for all of them the corresponding decimal expression, indicating what type of decimal number is each one of them.
 $\frac{147}{20}$ $\frac{51}{24}$ $\frac{4}{800}$ $\frac{4}{7}$ $\frac{7}{4}$ $\frac{4}{22}$ $\frac{11}{45}$ $\frac{5}{5}$ $\frac{4}{1}$
4. Order the following decimal numbers from the smallest to the greatest:
 $1'2345$ $1'\overline{2345}$ $1'234\overline{5}$ $1'\overline{2345}$ $1'234\overline{5}$
5. Place three exact decimal numbers and three recurrent decimal numbers among $1'2345$ and $1'23456$. Do the same with $6'5432$ and $6'54321$.
6.
 - a) How many hundredths are 470 thousandths?
 - b) How many tenths are 23000 ten thousandths?
 - c) How many hundredths are 2000 hundred thousandths?
 - d) How many thousandths are 5 hundred thousandths?
7. Answer the following questions and reason your answer:
 - Is the sum of two exact decimal numbers necessarily an exact decimal number? And the product? And the quotient?
 - If an exact decimal number and a recurrent decimal number are added, which kind of decimal number will we obtain?
 - Find two recurrent decimal numbers whose addition is an exact decimal.
8. We would like to know if $33'215/66'317$ and $1'04348/2'08341$ are exactly equal. Does the calculator contribute to answer the questions? Can you solve the question without using the calculator?
9. Find the decimal digit placed in the position 2300 after the comma in the numbers $\frac{3}{11}$ and $\frac{3}{14}$.
10. Find a fraction which is exactly 6 thousandths lower than $2'\overline{324}$.
11. Find a decimal number (having two decimal digits) which is at a distance lower than one hundredth from the number $\frac{1}{3}$.
12. Find a decimal number (having three decimal digits) which is at a distance lower than one thousandth from the number $\frac{15}{7}$.
13. Represent the following numbers by means of an irreducible fraction:
 $1'04$ $2'581$ $0'0005$ $0'123123...$ $0'00666...$ $123'45888...$
14.
 - a) If we have bought salami that costs $7'8$ €/kg and we have paid $5'85$ €, how much salami have we bought?
 - b) A trader buys 25 vases by $7'2$ € each. If one vase is broken and he/she wants to earn 120 € in total, what must be the price of each vase?

- c) If we have paid 2'25 euros per a package of 300 corks, what is the price of each cork?
- d) If we have paid 1'06 euros per a package of 80 paperclips, what is the price of each paperclip?
- e) If an adult step is 0'85 meters long, how many steps should an adult walk to go across 1 km?
- f) How much cheese 9'25 €/kg can we buy with 5 euros?
- g) A car consumes 8'4 liters of gasoline each 100 km. How many km can it go across with 25'2 liters?
- h) A watermelon of 2kg and 626 grams has cost 4.2 euros. What is the price of each kg?
- i) How many times does 0'063 contain 0'09?
15. Eva follows a diet and she cannot eat more than 600 calories per meal. Yesterday she had for breakfast: 125 g of bread, 140 g of asparagus, 45 g of cheese and an apple of 130 g. If 1 g of bread has 3'3 calories, 1 g of asparagus has 0'32, 1 g of cheese has 1'2 and 1 g of apple has 0'52, did Eva respect her diet?
16. A truck transports 50 boxes with bottles full of water. Each box contains 20 bottles of one liter and a half. An empty box weighs 1500 g and an empty bottle weighs 50 g. In addition, a fare of 0.05 per each 25kg has to be paid. How much has to be paid?
17. In a farm with 6000 laying hens there are a daily performance of 4 eggs per each five hens. The fourth part of the eggs has a large size, the half is composed by medium-sized eggs and the remaining part is made up by small eggs. In the handling process the 10% of the eggs for each different size is broken. The eggs which are not broken are sold to a wholesale, who pays them at 0.5€ per dozen of the smallest ones, 0.6€ per dozen of the medium-sized ones and 0.7€ per dozen of the largest ones. How much money is obtained in the farm every day with the sale of the eggs?
18. A dozen of pencils cost 1.8 euros in the warehouse, but every twelve dozens has a discount of 4 cents per each one of the twelve dozens. How much does a bookseller earn if he/she buys 192 pencils and he/she sells them at 0.3 euros per pencil?
19. We have bought a jar of 36kg of honey by 4'85€ per kg. We pack the third part in jars of 750 grams, other third part in jars of 500 grams and the remaining part in jars of 250 grams. The jars cost 0.35€, 0.30€ and 0.25€, respectively. Later we sell the packed honey by 6'35 €, 4'8 € and 3'75 € respectively. How much will we earn selling all the jars?
20. We have bought a tank of a liquor which contains 76.5 liters by 4'35€ per liter. We have packed it in bottles of 0.75 liters which we are going to sell by 9'85 per unit. If we take into account that each empty bottle costs 0'65€, and that in the transportation process (that has cost 23€) we have broken 2 bottles, how much money will we earn?