



APRENDER SEMPRE

7º ANO

ENSINO FUNDAMENTAL

MATEMÁTICA

Dear student and caregiver,

To prevent the dissemination of the new coronavirus, and to preserve everyone's health, school activities were paralyzed to reduce the circulation of people. In order not to interrupt your school studies even during the period of suspension of classes, the State Secretary of Education has prepared some materials to support you at this moment.

This material is divided in two parts: one on Portuguese Language and the other one in Mathematics. Here you will find activities to enhance your knowledge. Also, two inserts are included: one with information about COVID-19 and the other one with guidelines and suggestions for you to organize a study routine and continue learning, even without going to school!

When you return to school, you must hand over the activities to your teacher. That way you can have feedback on what you managed to advance and be supported to learn even more!

Good luck with your studies!



Nome da Escola: _____

Nome do Aluno: _____

Data: __/__/2020

Ano/Turma 7º Ano EF _____

Sequence 1

Skill 04 – Represent half measures using fractions

1. Observe the image

Imagem 1 - Relógio digital

Redefinir

Iniciar

Fonte: Relógio Online

From the image, it is correct to state that:

- a. An hour has 60 seconds.
- b. One minute has 60 seconds.
- c. An hour has 120 seconds.
- d. One minute has 120 seconds.

2. A glass of water is divided into three equal parts. The fraction of the glass with water is:

- a. $\frac{1}{2}$
- b. $\frac{2}{3}$
- c. $\frac{1}{3}$
- d. $\frac{1}{4}$

3. In how many parts equal to 10 minutes can we divide one hour?

- a. 3
- b. 4
- c. 5
- d. 6

4. The fraction representing 10 minutes in relation to 1 hour?

- a. $\frac{1}{6}$
- b. $\frac{1}{7}$
- c. $\frac{1}{8}$
- d. $\frac{1}{9}$

5. How many minutes represent $\frac{1}{4}$ of an hour?

- a. 10 minutes.
- b. 15 minutes.
- c. 20 minutes.
- d. 25 minutes.

6. A certain amount was divided into eight equal parts. Mariana, Juliana, and Silvia will receive three equal parts of that amount. How much each of them will receive?

- a. $\frac{1}{8}$
- b. $\frac{3}{8}$
- c. $\frac{5}{8}$
- d. $\frac{8}{3}$

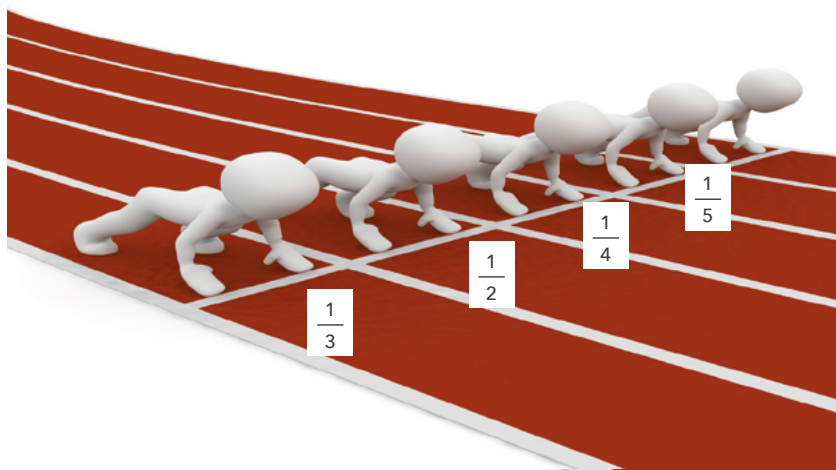
7. A gentleman decided to fill a 2-liters (l) bottle with 250 milliliters (ml) glasses. During the process, water was missing, but he had already put 6 glasses on the bottle.



How many ml of water are missing to fill the bottle?

- a. 200
- b. 300
- c. 400
- d. 500

8. The Corrida Internacional de São Silvestre takes place every year, in the city of São Paulo, on December 31st, exactly the São Silvestre's day, giving to this competition its name. In 2019, people from all countries covered 15 kilometers, but some of them gave up before completing the running race. In the image, it is written, in a fraction form, the mileage that five competitors traveled.



Fonte: Pixabay (Adaptado).

Considering the total mileage of the race, we can say that the athlete who ran the most may be represented by the fraction

- a. $\frac{1}{3}$
- b. $\frac{1}{2}$
- c. $\frac{1}{4}$
- d. $\frac{1}{5}$

Read the following text to answer questions 9 and 11.

A Girafa

A girafa (*Giraffa camelopardalis*) é um africano, mamífero de bico ungulado, o mais alto da vida animal terrestre e a maior de ruminantes. Suas principais características distintivas são o pescoço e pernas extremamente longos, seus chifres e seus padrões de revestimento distintos. Ela representa 5–6 m de altura e tem um peso médio de 1.600 kg para machos e 830 kg para as fêmeas. O animal pode fechar suas narinas musculares para proteger contra tempestades de areia e formigas. A língua tem cerca de 50 cm de comprimento.

Portal São Francisco. Disponível em: <<https://www.portalsaofrancisco.com.br/animais/girafa>>.

Acesso em: 06 jun. 2020.

9. From the text, we could see that the average weight of male girafas is 1 600 kg, and for females, 830 kg. What is the ratio between the average weight of female girafas and male girafas?

a. $\frac{1600}{830}$

b. $\frac{16}{83}$

c. $\frac{83}{16}$

d. $\frac{83}{160}$

10. In comparing the size of a male girafa's tongue to its size, how many times would its tongue fit into its height, in centimeters? (to compare, use the largest size, 6 meters). **Remember that 6 meters are equivalent to 600 centimeters.**

a. 10 times.

b. 11 times.

c. 12 times.

d. 13 times.

11. Which fraction represents the tongue of the female girafa by its minimum height of 5 meters? **(Remember that 5 meters are the equivalent of 500 centimeters).**

a. $\frac{1}{5}$

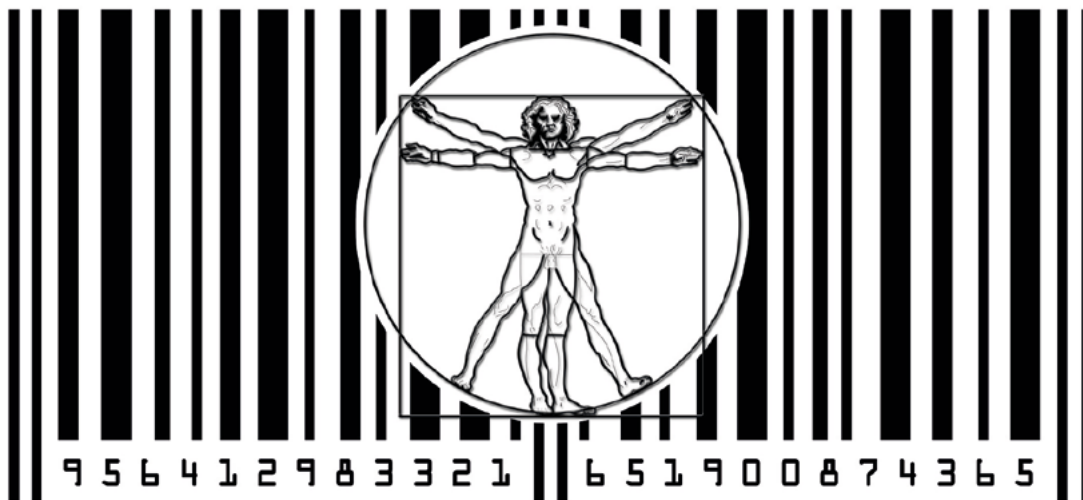
b. $\frac{1}{10}$

c. $\frac{1}{10}$

d. $\frac{1}{40}$



The Vitruvian Man, Leonardo da Vinci's work, is a study that aims to systematize the proportions of the human body.



Fonte: Pixabay.

12. For drawing, some proportions guided Leonardo da Vinci, for example, the maximum length on the shoulders is $\frac{1}{4}$ of a man's height. According to this proportion, a man with a height of 1.60 meters has, in centimeters, the measurement of the shoulder:

- a. 40 cm.
- b. 50 cm.
- c. 60 cm.
- d. 70 cm.

13. At Mariana's house, the daily expenditure of water with discharges corresponded to $\frac{2}{5}$ of the water tank capacity. By changing to a more economical discharge system, the same water tank consumed $\frac{1}{4}$ of its capacity. Then, the fraction of the water tank saved with this change was:

- a. $\frac{1}{20}$
- b. $\frac{3}{20}$
- c. $\frac{2}{4}$
- d. $\frac{1}{5}$

Sequence 2

Skill 03 – Solve problems involving the four basic operations between whole numbers (addition, subtraction, multiplication and division).

1. The following image indicates the distance between an avião and a cavalo marinho in the sea. The avião is 11,000 meters above the water surface. The cavalo marinho is 10 meters below the water surface.

Considering that water surface as point zero, we can state that the distance between the avião and the cavalo marinho is:

Imagem 2 - Avião e cavalo marinho



Fonte: Pixabay.

- a. 10 500 meters.
- b. 10 990 meters.
- c. 11 000 meters.
- d. 11 010 meters.

2. (AAP, 2016) From the following statements, choose the correct alternative:

- I. The set of whole numbers is made up of positive and negative natural numbers and also of numbers represented by fractions.
 - II. Irrational numbers are those in which the decimal representation is finite or infinite and periodic.
 - III. Real numbers represent the union of rational and irrational numbers sets.
- a. Only statement II is correct.
 - b. Only statement III is correct.
 - c. Only statement I is correct.
 - d. Only statement II and III are correct.



3. (SARESP, 2014) Observe a sequência.

32	35				47	50
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Os números que completam a sequência são:

- a. 39, 43 e 44
- b. 38, 41 e 44
- c. 37, 39 e 41
- d. 36, 37 e 38

4. (CURRÍCULO +, 2017) In a math gymkhana at school, a student who was participating got 20 points for correct hit and lost 22 points for error. Out of 100 questions, Ana scored 52.

What is Ana's points balance?

- a. 15
- b. 16
- c. - 15
- d. - 16

5. (SARESP, 2015) Calcule o saldo atual em reais (R\$) da conta bancária de Julia após as movimentações indicadas abaixo.

Imagem 3 - Extrato bancário

Banco Rosa Extrato de conta corrente Julia Maria Ag: 0001 - Conta corrente: XXXXX 28.04.2012 - 12h 05min	
Movimentação	
Lançamento	Valores em Reais (R\$)
Saldo anterior	250,00
Depósito	135,00
Cheque compensado	-172,00
Saque	-70,00

- a. 143
- b. 127
- c. -127
- d. -143

6. (SARESP) Em um jogo, o valor de cada ponto perdido é -4 , e o valor de cada ponto ganho é $+3$. Ana perdeu 13 pontos e ganhou 15 pontos. Fazendo os cálculos. Pode-se verificar que o total de pontos de Ana é:

- a. -10
- b. -7
- c. 3
- d. 11

7. Julieta is very concerned about the correct conservation of food, so she keeps foods such as fruits, vegetables, and meats in perfect storage conditions, especially frozen ones. Without time to prepare her meal, she took out of the freezer a vegetable soup that was at -2°C . When she heated her meal the temperature rose to 27°C . What is the temperature of the soup?

- a. 23°
- b. 25°
- c. 27°
- d. 29°

8. In a city in Alaska, the thermometer scored -15°C in the morning. If the temperature still drops more 13°C , the thermometer will score:

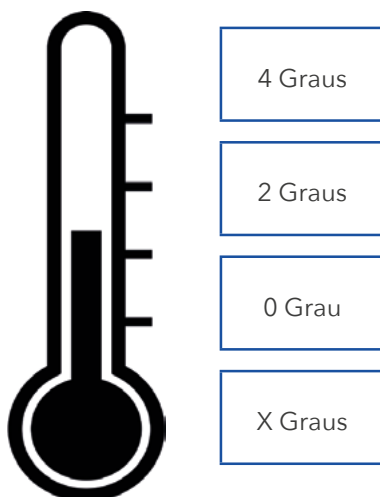
- a. -28°C
- b. -2°C
- c. 2°C
- d. 28°C

9. In a football match at the Mané Garrincha stadium in Brasília, the score was: team A = 3 goals; team B = 4 goals. What is the goal balance of team A, considering that this balance is calculated by the team's goals minus the goals conceded?

- a. 1
- b. -1
- c. 2
- d. -2



10. The image below represents the temperature of a certain city in one day. It is always published on the following day to inform the temperature variation. As the temperature drops, the volume of liquid inside the container falls down.



Fonte: Pixabay (Adaptado).

If the temperature kept falling, considering constant the descending interval, the temperature at the end of the day was:

- a. 4
- b. 2
- c. 0
- d. -2

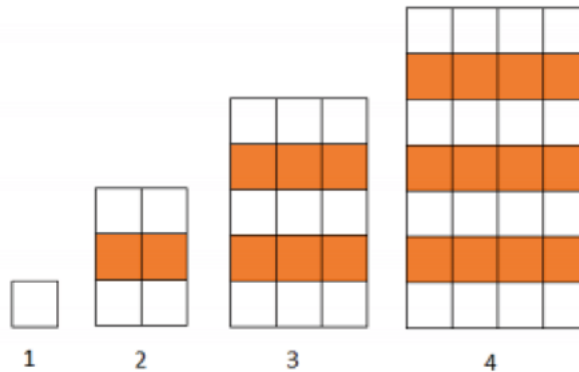
11. Marcela divided using the calculator and the quotient was -48. Write a text for this problem to discover the numbers used on Marcela's calculations.

12. In my bank account, I had a negative balance of R\$ 620.00. I deposited R\$ 1,920.00, but transferred R\$ 765.00 to pay the rent, and used the debit card to pay R\$ 248.00 in the supermarket. After paying these bills, what will my balance be?

Sequence 3

Skill 12 – Read and write algebraic expressions corresponding to mathematical texts written in the current language, and vice versa.

1. (CURRÍCULO +, 2017) See a drawing and painting proposal of squares:



Maintaining this pattern of drawing and painting, let's make some anticipations about how the figures would continue to be drawn and painted:

- a. How many squares will the base of the figure number 6 have?

- b. How many white stripes will you have on the grid number 15?

- c. And how many will be colored? _____

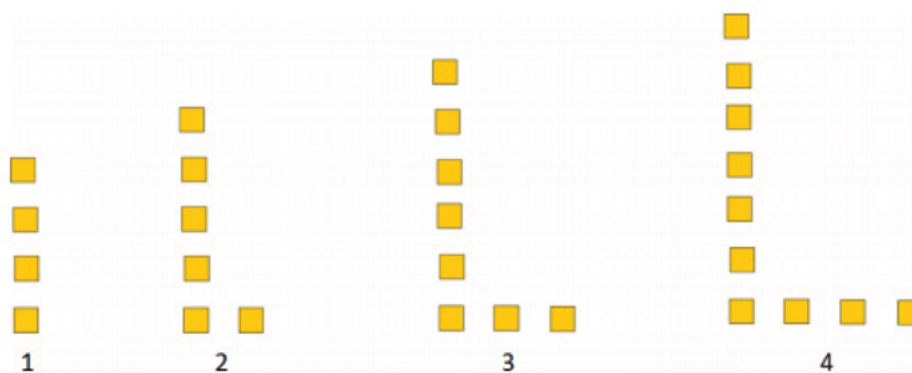
- d. Now, think of a grid number 1,000 and describe how it would look like.



e. The above questions have helped you to understand the pattern of drawing and painting on the grid. So, let's mathematically express that pattern. For that, we will not think on 1000, 40 or 2, we have to consider that what we are going to write should be valid for any number. Let's represent this number by the letter n . So, thinking of the number n , answer:

- How many squares will the base of the grid have? _____
- How many white stripes will that grid have? _____
- And how many will be colored? _____
- How many horizontal bands are in this figure? _____
- To find out if the mathematical expression you obtained represents the pattern of this sequence, take the test. Change the n for 1, do your calculations and see if it matches with what is shown in figure 1. Then do the same for the numbers 2, 3, and 4. If everything goes well, you should have obtained a good expression.

2. (AAP, 2013) In the following sequence, each figure is indicated by a number.



Which expression can be used to calculate the total number of squares of the figure at position n ?

- a. $4n$
- b. $n + 2$
- c. $2n$
- d. $2n + 2$

3. A delivery man does home delivery, and he charges R\$ 5.00 for each delivery, plus R\$ 0.10 for each kilometer driven, in the cidade de São Paulo. To deliver to other cities of the State, he charges an additional 10%. The delivery price for other cities in the state of São Paulo, in R\$, is:

- a. $(5 + 0,10x).1,1$
- b. $(5x + 0,10x). 10$
- c. $5(x + 03,0x 1,1)$
- d. $(5 + 03,0.10 x$

4. (Khan Academy, adaptada) The teacher asked the students to write in their notebooks the **expression** "eight more than the product of two and an x number". Only one student wrote correctly the expression representing it as

- a. $8 + x + 2$
- b. $8 + 2 \cdot x$
- c. $8 \cdot x + 2$
- d. $8 + x$

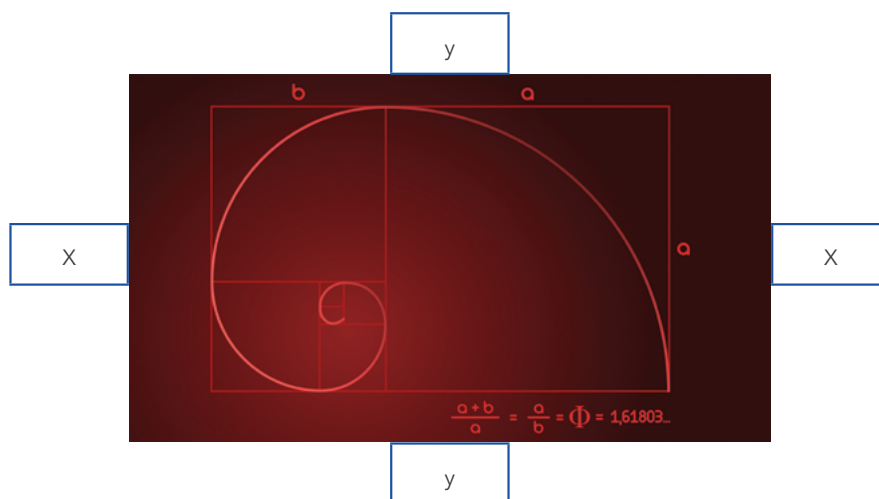
5. (Khan Academy, adaptada) How do you read the algebraic expression $8 - \frac{2}{x}$

- a. "two minus x plus eight".
- b. "eight minus the quotient of two and a number x".
- c. "eight minus the product of two and a number x".
- d. "eight plus the quotient of two and a number x".

6. Of the following expressions, the one that represents "four less than the product of one and a number x" is

- a. $X - 4$
- b. $4 - x$
- c. $4 \cdot x - 1$
- d. $1 - 4 \cdot x$

7. The following is a picture that an artist has painted and wants to put in a frame.



Fonte: Pixabay.



The expression representing the sum of the measurements of the sides for the frame, in meters, that is required is:

- a. $4 \cdot x$
- b. $4 \cdot y$
- c. $2 \cdot x + 2 \cdot y$
- d. $2 \cdot x - 2 \cdot y$

8. (Evaluación educativa–adaptada) Paulo owns a furniture factory. To calculate the price (V), in reais, of each piece of furniture he manufactures, he uses the following expression $V = 1.5C + 10$, being C the cost price of this piece of furniture, in reais. Considering $C = 100$, then Paulo will sell this piece of furniture for:

- a. 21
- b. 110
- c. 150
- d. 160

9. Two friends, after requesting a taxi, found the price unreasonable. They asked the driver how it was calculated. The driver explained: "The amount charged follows a pattern, that is, a fixed rate of R\$ 4.00, plus R\$ 0.30 for each kilometer driven". The two friends tried to formulate an expression to check it out and one of them succeeded by the expression:

- a. $P = 0,30x + 4,00$
- b. $P = 0,4x + 3,00$
- c. $P = 4x + 3,00$
- d. $P = 3x + 4$

10. You may have heard that there are even numbers and odd numbers. The sequence of even numbers is infinite: (0, 2, 4, 6, 8, ...). From the even numbers, you can find the odd numbers and assemble an algebraic expression that will result in an odd number. What is this equation?

- a. $I = P + 1$
- b. $P = 2I + 1$
- c. $I = 3P + 2$
- d. $P = 4I + 1$

11. The chemistry teacher asked students to copy the formula to calculate the density: "density equals mass divided by volume". The students who got it right wrote:

a. $d = \frac{m}{v}$

b. $m = \frac{d}{v}$

c. $v = \frac{d}{v}$

d. $d = \frac{v}{m}$

12. The price of the electricity bill is calculated by the cost of kW / hour (kilowatt per hour) plus some taxes. Consider, in a hypothetical situation, that the average rate in São Paulo is R\$ 0.56 per hour. Disregarding taxes, we can say that the expression that results in the amount to be paid by a family that used 100 kWh will be:

a. $x + 0,56$

b. $0,56x + x$

c. $0,56x$

d. $56x$

13. Sales at the shopping center are always increasing. A customer, passing by the store, found a sign that said "All with a 30% discount". He liked a piece that costs R\$ 200.00. What is the algebraic expression that represents the price to be paid?

a. $200,00 - 30\%$

b. $200,00 + 30\%$

c. $30\% - 200,00$

d. $30\% + 200,00$

