



| Secretaria de Educação



# APRENDER SEMPRE

## 6º 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 6º Ano EF \_\_\_\_\_

## SEQUENCE 1

### Skill 25 - Establish relationships between time units

The **calendar** has days, weeks, and months of the year, with holidays, lunar phases, and official holidays in a country.

- Observe the calendar of the first semester, 2020.

JANEIRO							FEVEREIRO							MARÇO						
D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S
			1	2	3	4								1						
5	6	7	8	9	10	11	2	3	4	5	6	7	8	1	2	3	4	5	6	7
12	13	14	15	16	17	18	9	10	11	12	13	14	15	8	9	10	11	12	13	17
19	20	21	22	23	24	25	16	17	18	19	20	21	22	15	16	17	18	19	20	21
26	27	28	29	30	31		23	24	25	26	27	28	29	22	23	24	25	26	27	28
1 – Ano Novo							25-Carnaval							29 – Dia da Mulher						
● 3-cresc. ○ 10-cheia ● 17-ming. ● 24-nova							● 1-cresc. ○ 9-cheia ● 15-ming. ● 23-nova							20-Início do Outono						
														● 2-cresc. ○ 9-cheia ● 16-ming. ● 24-nova						
ABRIL							MAIO							JUNHO						
D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S
			1	2	3	4								1	2					
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
19	20	21	22	23	24	25	17	18	19	20	21	22	23	17	22	23	24	25	26	27
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30				
10-Paixão de Cristo 19-Dia do Índio							31							11 – Corpus Christi						
12-Páscoa 21-Tiradentes							1-Dia do trabalho							12 – Dia dos namorados						
● 1-cresc. ○ 7-cheia ● 14-ming. ● 22-nova ● 30-cresc.							10 – Dia das mães							21 – Início do inverno						
							● 7-cheia ○ 14-ming. ● 22-nova ○ 30-cresc.							● 5-cheia ○ 13-ming. ● 21-nova ○ 28-cresc.						

Fonte: Elaborado pela equipe pedagógica.

Now, answer:

- How many days does the 1<sup>st</sup> semester 2020 have?

b. How many and which months compose the 1<sup>st</sup> semester?

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c. How many bimesters does de 1<sup>st</sup> semester have?

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d. How many trimesters does the 1<sup>st</sup> semester have?

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e. 2020 is a leap year. Explain what you understand by leap year.

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f. Which years will be the next leap years?

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g. Which months from the 1<sup>st</sup> semester have five Sundays?

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h. Which day is celebrated the Dia do Trabalho (International Workers' day)? In which day of the week will it be this year of 2020?

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2. Observe the calendar for the 2<sup>nd</sup> semester of 2020.

JULHO							AGOSTO							SETEMBRO							
D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S	
			1	2	3	4								1		2	3	4	5		
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12	
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19	
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26	
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30				
							30	31						7 - Independ. do Brasil							
							9 - Dia dos Pais							22 - Início da Primavera							
														○ 2-cheia ● 10-ming. ● 17-nova ○ 23-cresc.							
														○ 1-cheia ● 9-ming. ● 16-nova ○ 23-cresc. ○ 31-cheia							
OUTUBRO							NOVEMBRO							DEZEMBRO							
D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S	D	S	T	Q	Q	S	S	
			1	2	3		1	2	3	4	5	6	7	6	7	8	9	10	11	12	
4	5	6	7	8	9	10	8	9	10	11	12	13	14	13	14	15	16	17	18	19	
11	12	13	14	15	16	17	15	16	17	18	19	20	21	20	21	22	23	24	25	26	
18	19	20	21	22	23	24	22	23	24	25	26	27	28	27	28	29	30	31			
25	26	27	28	29	30	31	2 - Finados 15 - Proclamação da República 19 - Dia da Bandeira 20 - Consciência							21 - Início do Verão 25 - Natal							
12 - Nossa Senhora Aparecida 15 - Dia dos professores							○ 8ming. ● 15-nova ○ 22-cresc. ○ 30-cheia							○ 7-ming. ● 14-nova ● 21-cresc. ○ 30-cheia							



Now, answer:

- a. How many days does de 2<sup>nd</sup> semester of 2020 have?
- 

- b. How many and which months compose the 2<sup>nd</sup> semester of 2020?
- 

- c. How many bimesters does de 2<sup>nd</sup> semester have?
- 

- d. How many trimesters does de 2<sup>nd</sup> semester have?
- 

- e. Which months of the 2<sup>nd</sup> semester have four Sundays?
- 

- f. Which day is celebrated the Proclamação da República (Proclamation of the Republic)? In which day will it happen this year?
- 

- g. How many weeks are there, approximately, from the 25<sup>th</sup> July until Natal (Christmas)?
- 

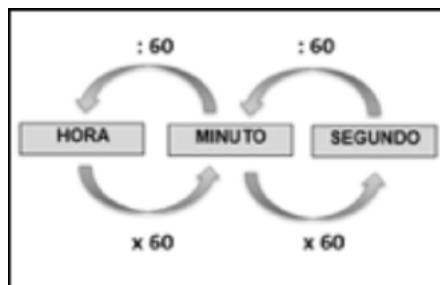
### 3. Observing the calendar,

Complete:

- a. A year is formed by \_\_\_\_\_ semesters, \_\_\_\_\_ trimesters and \_\_\_\_\_ bimesters.
- b. 2020 is a leap year. A leap year happens every \_\_\_\_\_ years and has a duration of \_\_\_\_\_ days.
- c. My name is \_\_\_\_\_.
- d. My birthday is on (day) \_\_\_\_\_ of the month \_\_\_\_\_.
- e. The day of the week I will celebrate my birthday this year is on \_\_\_\_\_.
- f. Autumn begins on (day) \_\_\_\_\_ of (month) \_\_\_\_\_.
- g. This year, the day of the week when Autumn begins is \_\_\_\_\_.
- h. Winter will start on the (day) \_\_\_\_\_ of (month) \_\_\_\_\_.
- i. This year the day of the week when winter begins is \_\_\_\_\_.
- j. Spring will start on (day) \_\_\_\_\_ of (month) \_\_\_\_\_.
- k. This year the day of the week when Spring begins is \_\_\_\_\_.
- l. Summer will start on (day) of (month) \_\_\_\_\_.
- m. This year the day of the week when Summer begins is \_\_\_\_\_.
- n. Moon phases happen within a lapse of \_\_\_\_\_ days.

4. Read and solve the problems that follow. These deal with time units.

**Remember:** The minute, second, hour, day, month, and year are examples of time units. We know an hour has 60 minutes, and that one minute has 60 seconds. Therefore, an hour corresponds to 3 600 seconds. To transform hours into minutes, we must multiply by 60. For example, 3 hours are equal to 180 minutes, that is,  $3 \times 60 = 180$ . The following scheme presents the operation we can do to pass from a unit to another one.



Fonte: Elaborado pela equipe pedagógica

- a. How many minutes does an hour have?
- 

- b. How many seconds do five minutes have?
- 

- c. How many seconds does an hour have?
- 

- d. How many minutes does half an hour have?
- 

- e. How many seconds does a quart of an hour have?
- 

- f. How many minutes do two hours and a half have?
- 

- g. How many minutes does an hour and a half have?
- 

- h. A football game has ninety minutes. Express this time in hours and minutes.
-



- 5.** Travel to the moon.  
**a.** Observe the following picture.

### Chegada do homem à Lua.



Fonte: Grátis PNG.

- b.** Read the following information:

Os noticiários, no dia vinte de julho de 1969, informaram que a nave espacial Apollo 11 pousou na Lua. Dois astronautas que estavam a bordo desta nave, Neil Armstrong e Buzz Aldrin, realizaram uma grande conquista, visto que foram os primeiros humanos a pisarem na superfície lunar. Esse fato foi considerado de total relevância para o mundo.

- c.** Now complete the following table with the date of this event of worldwide importance.

DAY	MONTH	MONTH

- d.** How many months ago did the man arrive to the moon?
- 

- 6.** Read the following text:

A Terra realiza movimentos no espaço, como o de rotação. Durante esse movimento, a Terra gira em torno de si mesma no sentido oeste para leste, dando-nos a impressão de que o Sol se movimenta, mas na verdade o planeta é que se move. Para a conclusão completa do movimento, são necessárias 24 horas, ou seja, um dia.

A sucessão de dias e noites acontecem devido a influência do eixo de inclinação terrestre no movimento de rotação.

A vida das pessoas e de outros seres vivos é influenciada diretamente pelo movimento de rotação. Se porventura não houvesse esse movimento, provavelmente não existiria vida no planeta, pois a parte iluminada da Terra teria temperaturas bastante elevadas e a porção não iluminada apresentaria temperaturas muitas baixas. Fator que certamente inibiria a proliferação de vida.

*Ministério da Educação. Disponível em: <<http://portaldoprofessor.mec.gov.br/fichaTecnicaAula.html?aula=28703>>.*

*Acesso em: 10 maio. 2020.*

Now, answer:

a. Is it day or night at the place you are at right now?

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b. How can we difference between day and night?

---

c. Is there any movement related to the determination of day and night?

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d. Is there any relationship between the happening of the day and of the night with the inclination of the terrestrial axis?

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e. And, if those inclinations didn't exist, how would the day and the night be?

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7. Read the following information:

A divisão do tempo em anos e meses foi criada pelos homens para que organizassem as atividades do dia a dia, como plantar na época de melhor tempo. Para isso, observaram o céu: a posição do Sol, de outras estrelas e da lua.

Now, complete:

- The duration of a day that has \_\_\_\_ hours, is determined by a complete Earth's lap around its own axis.
- A week is the period for each phase of the moon, it has \_\_\_\_ days.
- The month is an interval of \_\_\_\_ or \_\_\_\_ days and is related with the complete moon's lap around the earth.
- The year or approximately \_\_\_\_ days is the time the earth uses to do a complete orbit around the sun.



**8.** Solve the following problems.

**Attention:** Solve one problem at a time. Follow the next hints.

**1<sup>st</sup> step:** Comprehend the problem.

- a. What is the question the problem is asking? What does the problem want to know?
- b. What is the information of the problem? Is there any restriction? Which ones?

**2<sup>nd</sup> step:** Establish a plan to solve the problem.

- a. Which is (are) the idea(s) involved in this problem?
- b. Have you already solved a problem similar to this one? What was your strategy?
- c. Is there any formula, theorem, property or result that you know and that can help you solve this problem?

**3<sup>rd</sup> step:** Execute the plan: perform the strategy and do the necessary mathematical operations. Verify each step and observe if you can prove that they are correct.

**4<sup>th</sup> step:** Analyze the solution you arrived at and the elaboration of the answer- Verify if the solution(s) you got are enough to solve the problem, the arguments used and the results. Are there not any other solutions? Then you can elaborate an answer for the problem.

**9.** (SARESP - 2009) - Regina está toda feliz com seu carro novo. Ela irá pagá-lo em 18 meses. O tempo que Regina tem para pagar seu carro é:

Resolução do Problema

- a. 1 ano e 6 meses.
- b. 1 ano e 8 meses.
- c. 2 anos.
- d. 3 anos.

**10.** (PROVA BRASIL) - Uma bióloga que estuda as características gerais dos seres vivos passou um período observando baleias em alto-mar: de 5 de julho a 5 de dezembro. Baseando-se na sequência dos meses do ano, quantos meses a bióloga ficou em alto-mar estudando o comportamento das baleias?

Resolução do Problema

- a. 2 meses.
- b. 3 meses.
- c. 5 meses.
- d. 6 meses.

11. (SARESP 2007) - Por causa da queda de uma ponte, uma rodovia ficou interditada durante 2 meses. Durante quantas semanas a rodovia ficou interditada?

Resolução do Problema

- a. 4 semanas.
- b. 6 semanas.
- c. 8 semanas.
- d. 10 semanas.

12. (SARESP-2009) - Marcelo conseguiu atravessar o pátio, correndo, em 30 segundos. Podemos dizer que Marcelo atravessou o pátio em:

Resolução do Problema

- a. meio minuto.
- b. meia hora.
- c. trinta minutos.
- d. uma hora.



- 13.** (Prova Brasil) Para uma temporada curta, chegou à cidade o circo Fantasia, com palhaços, mágicos e acrobatas. O circo abrirá suas portas ao público às 9 horas e ficará aberto durante 9 horas e meia. A que horas o circo fechará?

Resolução do Problema

- a.** 16h30
- b.** 17h30
- c.** 17h45
- d.** 18h30

- 14.** (SARESP 2007) - A quantos minutos corresponde um período de tempo de seis horas e meia?

Resolução do Problema

- a.** 360
- b.** 390
- c.** 480
- d.** 650

- 15.** (SARESP 2007) - The doctor explained to the patient that he must take one pill of the same medicament each six hours. How many pills of that medicament must the patient take each day?

Resolução do Problema

- a.** 1.
- b.** 4.
- c.** 6.
- d.** 8.

## SEQUENCE 2

### Skill 21 - Identify hours and minutes by reading digital and analog clocks.

- Now read an excerpt of a poem by Vinicius de Moraes.

#### O Relógio

Vinicius de Moraes

Passa o tempo tic, tac, tic, tac passa a hora  
 Chega logo tic, tac, tic, tac, vai-te embora,  
 Passa tempo bem depressa  
 Não atrasa nem demora,  
 Que já estou muito cansado,  
 Já perdi toda alegria  
 De fazer meu tic-tac, dia e noite, noite e dia,  
 tic, tac, tic, tac.

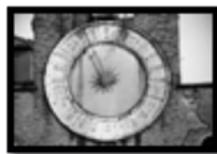
- Now write down the actions you perform every day, and that must be completed at certain hours.
- 
- 
- 

- Read the following information:

By observing natural phenomena and heavenly bodies, men learned to calculate the days, the changing of the seasons, and the new year. Based on those observations they created instruments to measure time.

Now, there are some examples of those instruments.

Sundial - over 4 thousand years ago, Egypt.

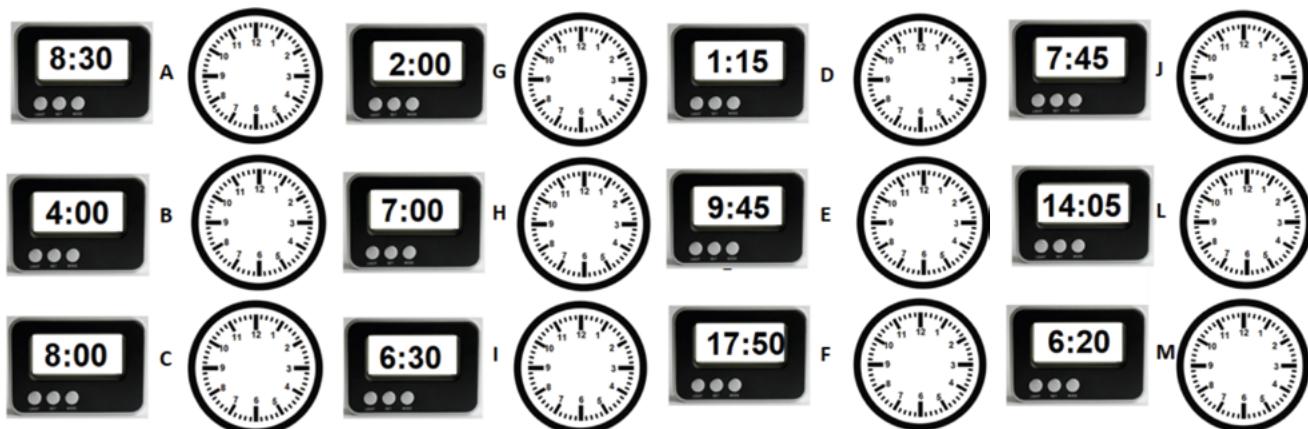




Clepsydra – 1400 B.C., Egypt.	
Hourglass – 1400 B.C., Egypt.	
Mechanical clock – 18th century, Europe.	
Digital clock – 20th century, United States.	

Fonte: Pixabay.

4. Write on the analog clock the hours marked in the digital clock.



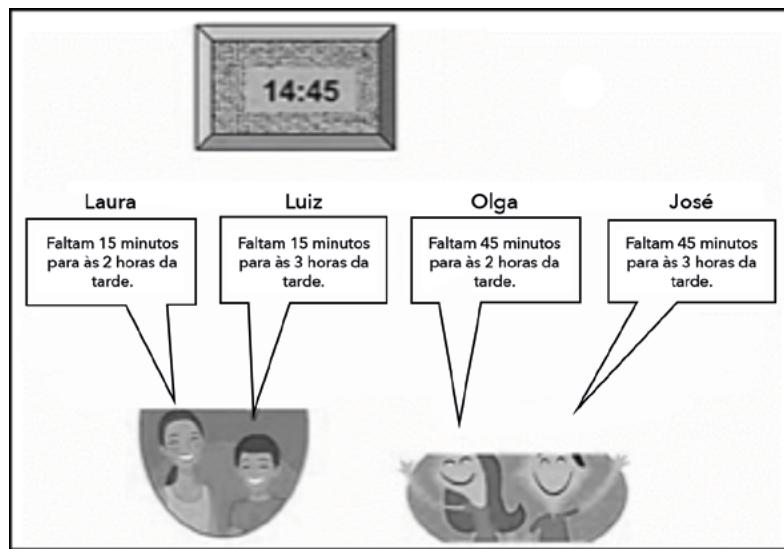
Fonte: Pixabay.

- 5.** Read the following problems, think of a solution plan and solve them.
- 6.** (SARESP 2010) A médica explicou que o paciente deveria tomar 1 comprimido do mesmo medicamento a cada 6 horas. Quantos comprimidos desse medicamento o paciente deve tomar por dia?



Isto é o mesmo que dizer que o filme começou:

- a.** à 1h 25min da tarde.
  - b.** às 2h 25min da tarde.
  - c.** às 3h 25min da tarde.
  - d.** às 4h 25min da tarde.
- 7.** (SARESP 2009 - adaptado) Observe como cada amigo leu a hora indicada no relógio a seguir.



Quem leu a hora corretamente foi:

- a.** Laura.
- b.** Luiz.
- c.** Olga.
- d.** José.



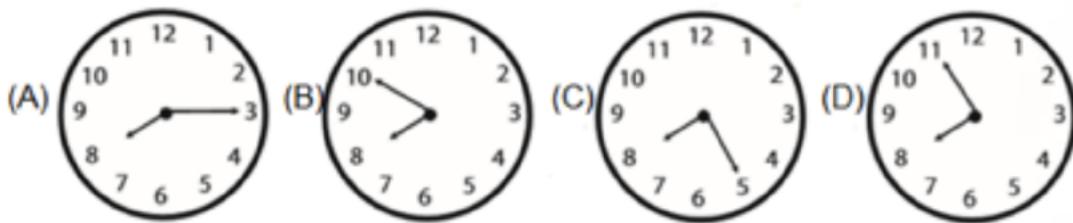
8. (SARESP 2011) - Observe o relógio digital a seguir.



Que horário aparecerá no mostrador desse relógio daqui a 10 minutos?

- a. 12: 20
- b. 12: 30
- c. 12: 35
- d. 12: 40

9. (SARESP 2015) - Luciana comprou um relógio de ponteiro. Para acertar as horas no novo relógio, olhou no seu rádio relógio que marcava 20:25. Dos relógios a seguir, qual é o da Luciana?



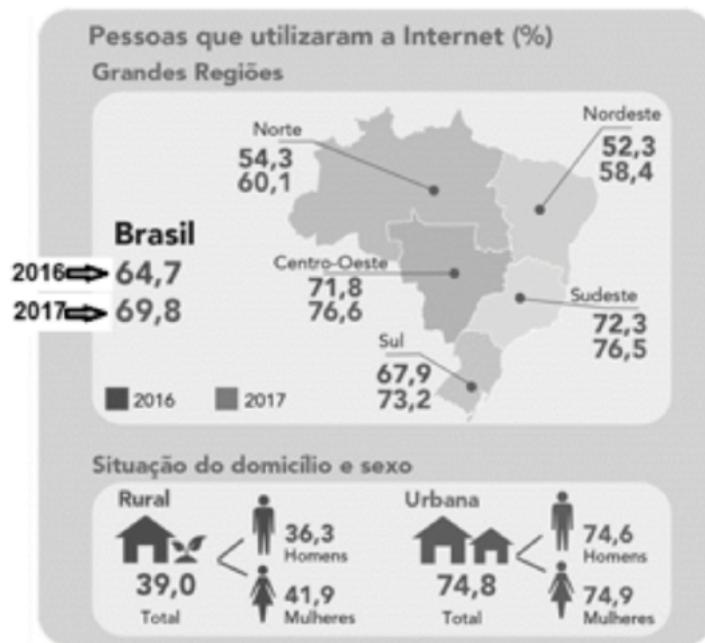
## SEQUENCE 3

**Skill 29 - Read and/or interpret information and data presented in tables, and elaborate tables.**

**INFORMATION** - Infographic is a useful tool to communicate information employing images, drawings, and other visual elements. It is considered an important tool used in journalistic texts or scientific communication.

1. Now read a problem related to the infographic and think about a solution plan and solve it.

According to data by the Instituto Brasileiro de Geografia e Estatística (IBGE), among Brazilians of 10 years old or more, 69,8% use Internet. Observe the record of that data.



Fonte: IBGE, Diretoria de Pesquisas, Coordenação de Trabalho e Rendimento, Pesquisa Nacional por Amostra de Domicílios Contínua 2016-2017.

Now, answer:

a. What is the graphic's topic?

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b. Which is the graphic's title?

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c. Where was the data on the graphic collected?

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d. On which years were the surveys performed?

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e. What is the name of the institute that performed this research?

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f. In which habitational situations was the research performed?

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g. According to the reading of the infographic, answer V for true affirmations and F for false ones.

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T or F
Os menores percentuais do uso da <i>internet</i> foram observados nas Regiões Nordeste (58,4%) e Norte (60,1%) registrados em 2016 e 2017.
Na zona rural, o grupo que utiliza mais a <i>internet</i> são as mulheres.
Os maiores percentuais do uso da <i>internet</i> foram observados nas regiões Centro-oeste e Sudeste registrados em 2016 e 2017.
Na zona urbana, 74,6% das mulheres utilizam a <i>internet</i> .

**INFORMATION:** Tables are used to organize, summarize data, and present information. It is an instrument used to help on the analysis and interpretation of data, because it allows the reader to have an idea about the topic analyzed and get easily to conclusions.

1. Now, read the problem related to the table, think of a solution plan and solve it.
2. The IBGE performed research about the existence of some assets at residences. They show primarily how many houses have a geladeira, máquina de lavar roupas, motocicleta and automóvel. In the following table there is the information.

**Table 1 - Percentual de domicílios que possuem bens de consumo.**

Porcentagem de domicílios	Objetos (bens)
98%	geladeira
65%	máquina de lavar roupas
22%	motocicleta
49%	automóvel

Fonte: Educa IBGE. Disponível em: <<https://educa.ibge.gov.br/criancas/brasil/atualidades/20825-como-sao-os-domiciliros-dos-brasileiros.html>>. Acesso em: 10 maio. 2020.

In Brazilian houses the least common object is:

- a. O automóvel.
- b. A geladeira.
- c. A máquina de lavar roupas.
- d. A motocicleta.