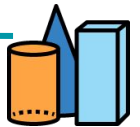




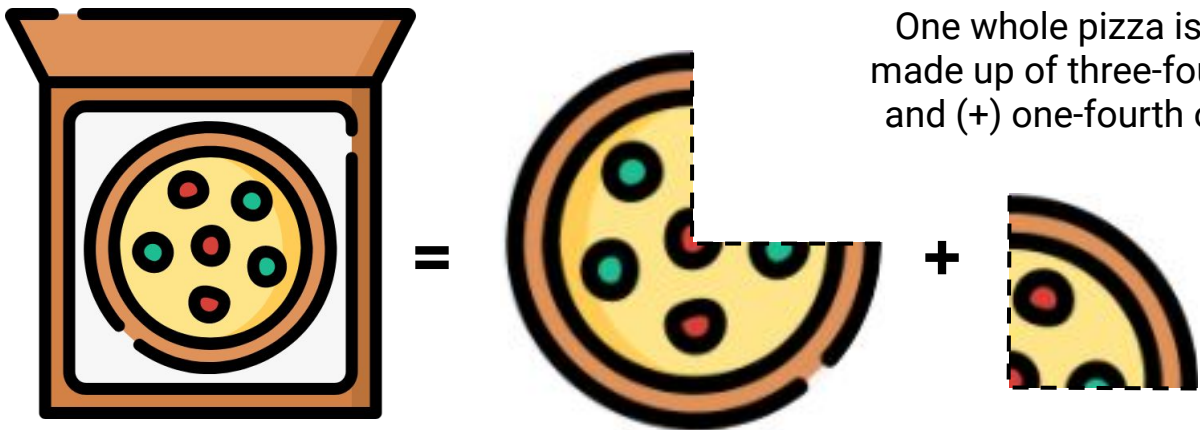
# Helping With Math

## Adding and Subtracting Similar Fractions and Mixed Numbers

GRADE 4



Adding and subtracting similar fractions, as well as mixed numbers, is just like doing the said arithmetic operations in whole numbers, with the denominators being copied.



- **Addition** is an arithmetic operation that results with the *sum* or *total*. It is putting two or more numerical values together.
- **Subtraction** is the inverse or opposite of addition. It aims to find out how much of a value is *left* if a certain part of it was taken.



## ADDING SIMILAR FRACTIONS

In **adding and subtracting similar fractions**, the numerators have to be added or subtracted as how it is done to whole numbers. Then, copy the denominator.



### EXAMPLE #1:

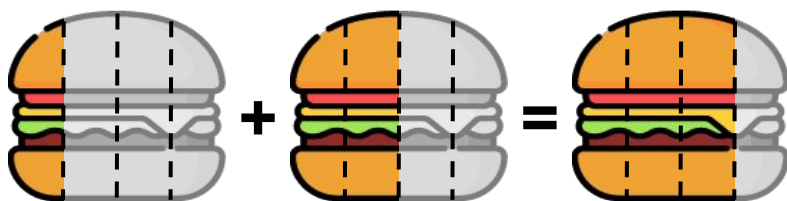
*numerators*

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

*The sum of 1 and 2 is 3.*

*Copy the denominator.*

### ILLUSTRATION:



### EXAMPLE #2:

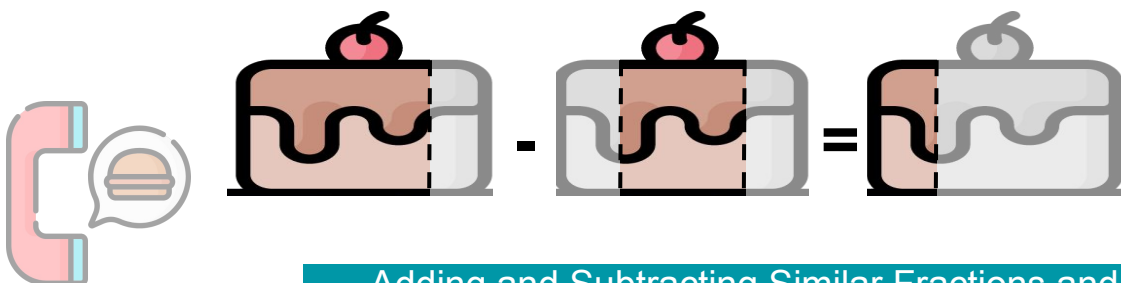
*numerators*

$$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$

*The difference between 3 and 2 is 1.*

*Copy the denominator.*

### ILLUSTRATION:



## SUBTRACTING SIMILAR FRACTIONS

Meanwhile, in **adding and subtracting mixed numbers**, the following steps shall be followed.



**GIVEN:**  $3\frac{1}{4} + 2\frac{2}{4} = ?$

**Step 1:** The given mixed numbers shall be transformed to improper fractions first.

$$3\frac{1}{4} = \frac{(3 \times 4) + 1}{4} = \frac{13}{4}$$

$$2\frac{2}{4} = \frac{(2 \times 4) + 2}{4} = \frac{10}{4}$$

*Multiply the whole number and denominator then add the numerator of the fraction. Copy the denominator.*

**Step 2:** Perform the necessary mathematical operation.

$$\frac{13}{4} + \frac{10}{4} = \frac{13 + 10}{4} = \frac{23}{4} = 5\frac{3}{4}$$

**Step 3:** Simplify if necessary.



### EXAMPLE #3:

$$5\frac{1}{4} - 2\frac{3}{4} = ?$$

$$5\frac{1}{4} - 2\frac{3}{4} = \frac{21}{4} - \frac{1}{1} = \frac{10}{4} = 2\frac{2}{4} = 2\frac{1}{2}$$



## CLUE WORDS IN WORD PROBLEMS



When used into **word problems**, the given situation can be translated into numerical equation using some word clues.

ADDITION	SUBTRACTION
all together add both combine in all increased by plus sum together total	decreased by difference (between) fewer how many more less less than minus remain remove spend subtract take away

SOME OF THE CLUE WORDS:

### EXAMPLE:

**Word Problem:** "One-third is taken away from two-thirds."

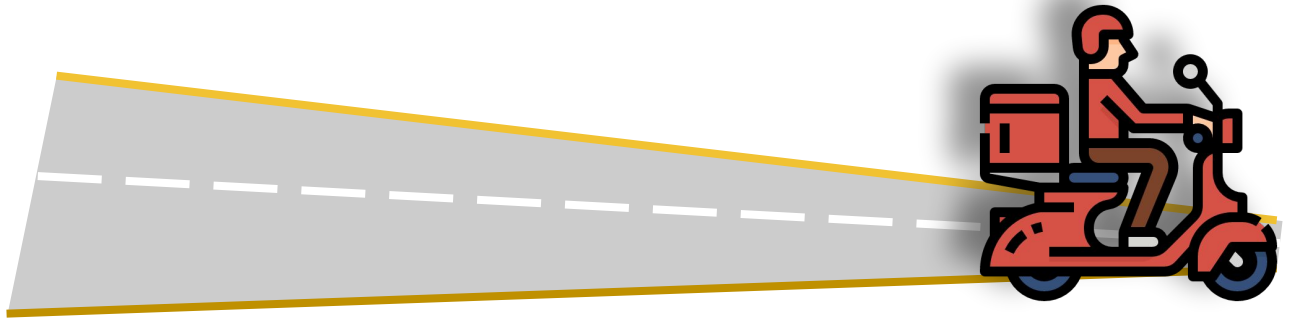
**Mathematical Equation:**  $\frac{2}{3} - \frac{1}{3} = ?$

(indicates subtraction)



## SAMPLE/APPLICATION

Jerry, a delivery person, was tasked to deliver boxes of doughnuts in a specific address. The distance from the store and the house where he will deliver is five-sixths of a mile. If Jerry had already travelled two-sixths of a mile from the store, how much more does he need to travel to reach his destination?



Answer the following questions about the word problem above:

1. What are the given values?

---

2. What is the clue word to know the operation to be used?

---

3. What operation shall be used as said by the clue word?

---

4. Write the appropriate mathematical equation translating the word problem.

---

5. Solve for the answer.

---



## TABLE OF ACTIVITIES

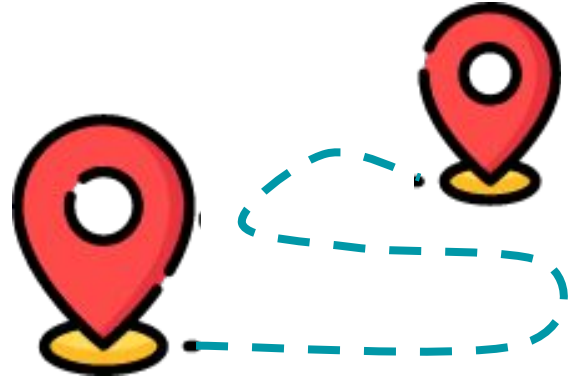
1. Sort'em Out
2. Food on Deliveries
3. Waiting Hours
4. Split the Bill
5. Discount
6. Spilled Food
7. Delivery Dash
8. Packaging
9. Working Time
10. Fuel Consumption



# SORT'EM OUT

Two addresses called for delivery, but the delivery person mixed the orders. Help him sort the items to its respective address.

Food packs were labeled as the *clue words* in word problems and are listed below. The first address was Addition Residence while the other one is Subtraction Residence. Determine which clue word indicates addition or subtraction.

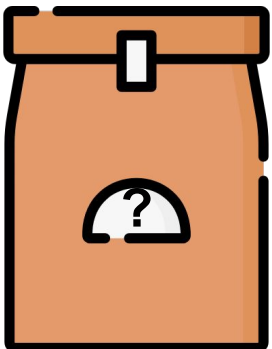


## List of Orders:

- both
- combine
- difference between
- fewer
- how many more
- in all
- less
- minus
- plus
- remain
- sum
- take away

## ADDITION RESIDENCE

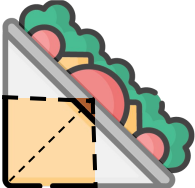
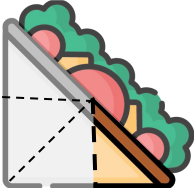
## SUBTRACTION RESIDENCE


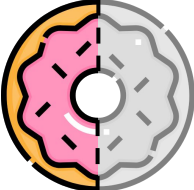
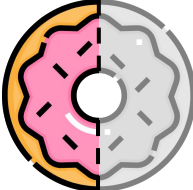







# FOOD ON DELIVERIES

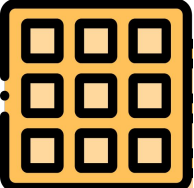
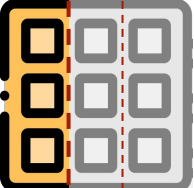
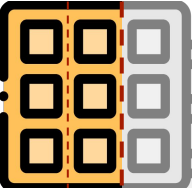
There are only few types of food that are offered in online deliveries. Solve for the parts of food below, with the use of indicated operations below.

Below are illustrations of portions of different food offered in deliveries used in equations. Solve for the correct answer. Answers shall be in the form of fractions in numbers, not illustrations.

1  -  =

2   +  =

3    +   =

4   -  =





# WAITING HOURS

Five online customers want to know how long should they needed to wait for the bucket of chicken she ordered. Help them by applying the rules on subtracting similar fractions.

If the delivery boy had left the store for certain minutes, find out how long the customers' remaining waiting hours will be, based on the estimated time of arrival.



The table contains the following:

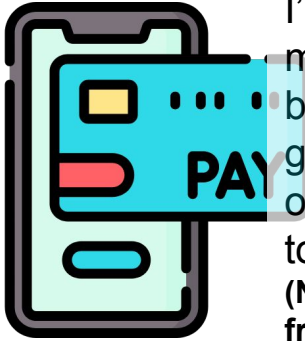
- **Customer A** - *estimated time* of arrival of the delivery in minutes.
- **Customer B** - *estimated time* of arrival of the delivery in hours.
- **Customer C** - minutes *since the delivery man left the store*.
- **Customer D** - hours *since the delivery man left the store*.
- **Customer E** - contains the *remaining waiting time* in hours. ( $E = B - D$ )

A (in minutes)	B (in hours)	C (in minutes)	D (in hours)	E (in hours)
40	$\frac{4}{6}$	30	$\frac{3}{6}$	?
36	$\frac{3}{5}$	12	$\frac{1}{5}$	?
30	$\frac{2}{4}$	15	$\frac{1}{4}$	?
40	$\frac{2}{3}$	20	$\frac{1}{3}$	?
48	$\frac{4}{5}$	12	$\frac{1}{5}$	?



# SPLIT THE BILL

The delivery arrived in a house but different members of the family ordered it. Help them in splitting the bill.





I'm Anne, a delivery girl. I need to make sure they paid the whole bill. Oh! I remember! The store gave discount today, so their bill only includes certain part of the total amount.

(NOTE: The prices are in a form of fraction as part/s of the total amount.)




## Parents' Orders:

 1 cooked chicken =  $\frac{2}{6}$

 delivery fee =  $\frac{1}{6}$


TOTAL:

## Sister's Orders:

 1 milk tea =  $\frac{1}{6}$

TOTAL:

## Brother's Orders:

 2 burgers =  $\frac{1}{6}$

TOTAL:

Find the total portion (of the total amount) that I should receive.

## Breakdown of the Expenses

PARENTS' =

SISTER'S =

BROTHER'S =

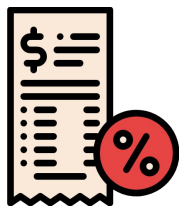
TOTAL =

You may use this space for your solutions:



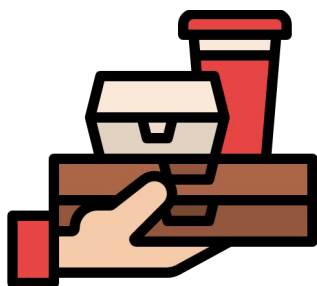
# DISCOUNT

Food delivery services offer discount to senior citizen customers. Compute for the missing price of some items in the receipt.



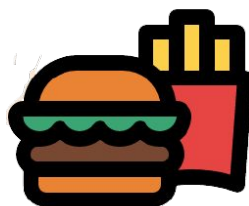
A food store offering deliveries gives 20% ( $\frac{1}{5}$  when converted to fraction) discount to their customers who are above sixty years old. Complete the receipt by filling the missing price/s.

? missing price



Granny A's Orders:

- 2 boxes of pizza  
=  $\frac{2}{5}$
- 1 pc. chicken  
=
- 1 cup soda  
=  $\frac{1}{5}$
- TOTAL** =  $\frac{4}{5}$



Granny B's Orders:

- 1 burger  
=  $\frac{2}{5}$
- 1 reg. fries  
=
- TOTAL** =  $\frac{4}{5}$



Granny B's Orders:

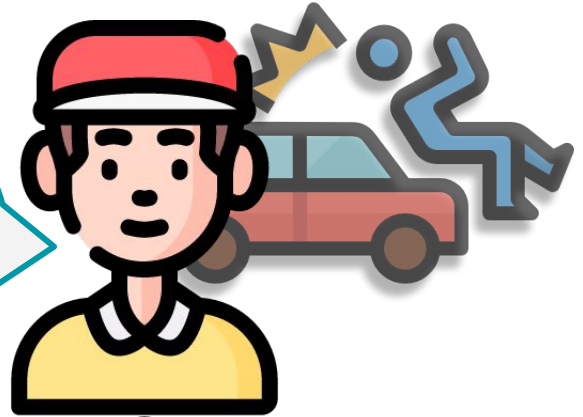
- 1 burger  
=  $\frac{1}{5}$
- 1 choco shake  
=
- 1 regular fries  
=  $\frac{1}{5}$
- TOTAL** =  $\frac{4}{5}$



## SPILLED FOOD

Accidents happen during some food deliveries, mainly causing some food to spill. Read the problems of the said scenario and solve for the answer.

I am Rem. I work as a delivery person for different food shops and I've met some minor accidents that caused trouble about the food I was delivering.



### WORD PROBLEMS

1. One day, he did not notice a small hole in the road and the wheel of his motorcycle passed through it causing  $\frac{1}{5}$  cup of the coffee he will deliver to spill. If the order was originally  $\frac{4}{5}$  of a cup, how much coffee was left?
2. When he was to deliver a box of pizza and was walking towards the door of the house he accidentally stepped on a stone, causing some pizza to drop.  $\frac{2}{5}$  of the whole pizza fell. What part of the pizza remained? (CLUE: 1 WHOLE PIZZA =  $\frac{5}{5}$ )

### QUESTIONS

Given: \_\_\_\_\_

Clue Word: \_\_\_\_\_

Equation: \_\_\_\_\_

Answer: \_\_\_\_\_

Given: \_\_\_\_\_

Clue Word: \_\_\_\_\_

Equation: \_\_\_\_\_

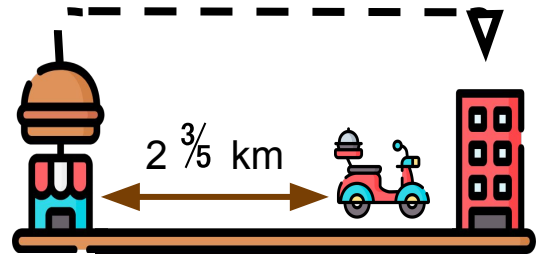
Answer: \_\_\_\_\_



# DELIVERY DASH

Burgers are needed to be delivered to five different locations. Determine the remaining distance left for the delivery person to reach them.

Sheila needs to deliver a number of burgers to five different locations. After reaching a certain distance away from the store (as specified in the figure above), she impatiently checks the distances from the store to every location for her to know how far she needed to travel. Help her find the distance left for her to reach each address.



Remaining Distance (in km)

Distance From the Store  
to the Location (in km)

Name of Locations

A	B	C
Sunny Ville	$3 \frac{4}{5}$	?
Louie's Village	4	?
Apartment L	$5 \frac{3}{5}$	?
Mortel's Residence	$6 \frac{2}{5}$	?
Apartment S	$7 \frac{1}{5}$	?

Write your solutions here.

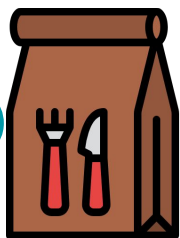


# PACKAGING

**Food deliveries require presentable packaging. Find the total materials to be used to make different food packagings.**

Compute for the total measurement of materials to be used in making the following food packaging bags or boxes.

1



The front and rear part measures  $1 \frac{1}{3}$  sq ft. Two sides measure  $\frac{2}{3}$  sq ft. The bottom measures  $\frac{1}{3}$  sq ft while the top is open.

**Total (in sq ft) = \_\_\_\_\_**

2



The front and rear part measure  $1 \frac{2}{5}$  sq ft. Two sides measure  $\frac{2}{5}$  sq ft. The bottom measures  $\frac{2}{5}$  sq ft while the top is open. The handle takes up  $\frac{1}{5}$  sq ft of material.

**Total (in sq ft) = \_\_\_\_\_**

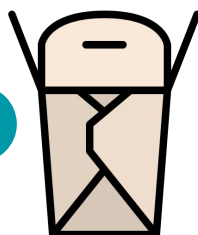
3



The front and rear part measure  $\frac{2}{3}$  sq ft. Two sides measure  $\frac{1}{3}$  sq ft. The bottom measures  $\frac{1}{3}$  sq ft while the top is consumes  $\frac{2}{3}$  sq ft. The handle takes up  $\frac{1}{3}$  sq ft of material.

**Total (in sq ft) = \_\_\_\_\_**

4



The front and rear part measure  $1 \frac{2}{5}$  sq ft. Two sides measure 1 sq ft. The bottom measures  $\frac{2}{5}$  sq ft while the top consumes  $1 \frac{2}{5}$  sq ft.

**Total (in sq ft) = \_\_\_\_\_**



## WORKING TIME

A delivery person works for a certain number of hours a day. Read the following problems related to them and solve for what is asked.

Solve for the following word problems:

1. Dino is working as a food delivery person. He spends  $\frac{3}{5}$  of his every day doing his job. One day, he did not feel well and was 4.8 hours (equivalent to  $\frac{1}{5}$  of a day) late on his work. How much time is left for him to attend to his job?

ANSWER: \_\_\_\_\_

2. Rie, a food delivery person, works in a day shift of  $8\frac{2}{3}$  hours a day. If his lunch break was  $1\frac{1}{3}$  hours from his shift, how much time is allotted for him to do his deliveries?

ANSWER: \_\_\_\_\_

3. Dim was tasked to deliver a dish to a distant customer. The dish needs to be reheated  $1\frac{1}{4}$  hours after it was cooked or it will be spoiled. If the preparation, together with the delivery, were estimated to take  $\frac{3}{4}$  hours, how much time is left before the delivered dish get spoiled?

ANSWER: \_\_\_\_\_

4. Karen has only  $1\frac{5}{6}$  hours left in her shift as a delivery person. A delivery with an estimated time of  $1\frac{1}{6}$  hours was given to her. How much time shall she expect as an overtime if the time for her to travel back to the store is counted in the overtime pay?

ANSWER: \_\_\_\_\_

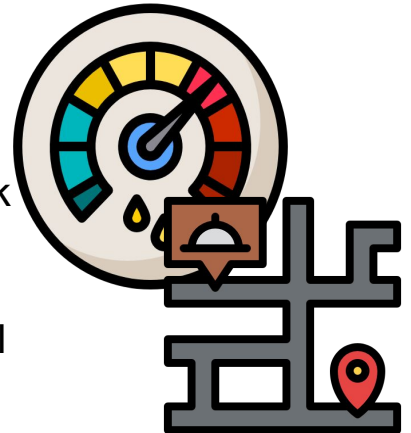


# FUEL CONSUMPTION

Alex wants to monitor his fuel consumption for the motorcycle he is using in food delivery. Read the notes he took down and answer the question in the end.



## ONE DAY OF ALEX AS A DELIVERY BOY



- I checked the gas tank before going to work and it still has  $4\frac{2}{5}$  liters of fuel.
  - Travelling to the store I am working for, I consumed  $\frac{2}{5}$  liters of fuel.
  - For my first delivery, I served two customers: one from a distance requiring  $\frac{4}{5}$  liters of fuel and another one that can be reached after consuming  $\frac{2}{5}$  liters of fuel from the other customer.
  - With these deliveries, I needed to go back to store for the 1 liter of fuel.
  - Then, a distant customer called for delivery. On my calculation, going there will need  $1\frac{3}{5}$  liters of fuel.
- Will the fuel left in my gas tank after reaching the previous customer be enough for me to reach the gas station that needs  $\frac{2}{5}$  liters of fuel to be reached? Why or why not?

ANSWER:





# ANSWER GUIDE

## Activity 1

### Addition Residence

- both
- combine
- in all
- plus
- sum

### Subtraction Residence

- difference between
- fewer
- how many more
- less
- minus
- remain
- take away

## Activity 3

$$\frac{1}{6}$$

$$\frac{2}{5}$$

$$\frac{1}{4}$$

$$\frac{1}{3}$$

$$\frac{3}{5}$$

## Activity 2

$$\frac{1}{4}$$

$$2$$

$$3\frac{3}{4}$$

$$\frac{2}{3}$$

## Activity 4

$$\text{Parent's} = \frac{3}{6}$$

$$\text{Sister's} = \frac{1}{6}$$

$$\text{Brother's} = \frac{1}{6}$$

$$\text{TOTAL} = \frac{5}{6}$$

## Activity 5

$$1 \text{ pc chicken} = \frac{1}{5}$$

$$1 \text{ regular fries} = \frac{2}{5}$$

$$1 \text{ choco shake} = \frac{2}{5}$$

## Activity 6

1.)	<b>Given</b>	: $\frac{1}{5}$ and $\frac{4}{5}$	2.)	<b>Given</b>	: $\frac{5}{5}$ and $\frac{2}{5}$
	<b>Clue Word</b>	: spilled		<b>Clue Word</b>	: remained
	<b>Equation</b>	: $\frac{4}{5} - \frac{1}{5}$		<b>Equation</b>	: $\frac{5}{5} - \frac{2}{5}$
	<b>Answer</b>	: $\frac{3}{5}$		<b>Answer</b>	: $\frac{3}{5}$



## ANSWER GUIDE

### Activity 7

Sunny Ville =  $1 \frac{1}{5}$

Louie's Village =  $1 \frac{2}{5}$

Apartment L = 3

Mortel's Residence =  $3 \frac{4}{5}$

Apartment S =  $4 \frac{3}{5}$

### Activity 8

1.)  $2 \frac{1}{3}$  sq ft

2.)  $2 \frac{2}{5}$  sq ft

3.)  $2 \frac{1}{3}$  sq ft

4.)  $5 \frac{1}{5}$  sq ft

### Activity 9

1.)  $\frac{2}{5}$  of a day

2.)  $7 \frac{1}{3}$  hours

3.)  $\frac{2}{4}$  hours

4.)  $\frac{3}{6}$  hours

### Activity 10

No, because only  $\frac{1}{5}$  liter of fuel was left in the gas tank.



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