ISTEP+ Grade 7
Writing

Truck Rental

Practice Set 2
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

Part A
Sue rented a truck from the company and was charged $82.50 when she returned the truck.
Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation

Part B
On the lines provided, define what the variable in your equation represents.

\[ p = 95 \text{ miles} \]

Part C
Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.
How much, in dollars, does Sue pay for the gas?

Show All Work

Answer: $41.24

The response indicates a limited understanding of the mathematical processes related to the task. The variable is correctly defined in Part B, but an incorrect process to find the cost of the gas is shown in Part C.

The response indicates no understanding of the mathematical concepts by providing an incorrect equation in Part A and incorrect work to find the total number of miles in Part C.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

**Part A**

Sue rented a truck from the company and was charged $82.50 when she returned the truck.

Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation $25.00 + 0.50m = \boxed{82.50}$

**Part B**

On the lines provided, define what the variable in your equation represents.

$m = \text{miles}$

**Part C**

Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.

How much, in dollars, does Sue pay for the gas?

**Show All Work**

\[
\begin{align*}
25 + 0.50m &= 82.50 \\
0.50m &= 82.50 - 25 \\
0.50m &= 57.50 \\
m &= \frac{57.50}{0.50} \\
m &= 115
\end{align*}
\]

**Answer** $71.88$

**Content - 3 pts** The response indicates a thorough understanding of the mathematical concepts by providing a correct equation in Part A and work to find 115 miles in Part C.

**Process - 0 pts** The response indicates no understanding of the mathematical processes related to the task. The variable is insufficiently defined in Part B. Although the correct process of dividing by 8 and multiplying by 3.50 is shown in Part C, the additional step of dividing 50.3125 by 0.7 renders the entire process incorrect.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

**Part A**

Sue rented a truck from the company and was charged $82.50 when she returned the truck.

Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation: \( \frac{50}{8} + 25 \)

**Part B**

On the lines provided, define what the variable in your equation represents.

let \( x \) represent the number of miles Sue drove.

**Part C**

Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.

How much, in dollars, does Sue pay for the gas?

**Show All Work**

\[
\begin{align*}
\frac{50}{8} + 25 &= 12.50 + 25 \\
\frac{50}{8} &= x = 115 \text{ miles}
\end{align*}
\]

**Answer** $50.31

**Content - 1 pt** The response indicates a thorough understanding of the mathematical concepts by providing a correct equation in Part A and work to find 115 miles in Part C.

**Process - 3 pts** The response indicates a thorough understanding of the mathematical processes related to the task. The variable is defined correctly in Part B, and the correct process of dividing by 8 and multiplying by 3.50 is shown in Part C along with correct calculations and rounding.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

**Part A**

Sue rented a truck from the company and was charged $82.50 when she returned the truck.

Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation

\[
\frac{82.50 - 25.00}{0.50} = m
\]

**Part B**

On the lines provided, define what the variable in your equation represents.

\[
m = \text{miles driven}
\]

**Part C**

Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.

How much, in dollars, does Sue pay for the gas?

**Show All Work**

\[
\begin{array}{c}
\times 3.50 \\
8 \\
\hline
28.50
\end{array}
\]

**Answer** $28.50

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**Content - 2 pts**
The response indicates a partial understanding of the mathematical concepts by providing a correct equation in Part A, but no work to find total miles driven in Part C.

**Process - 1 pt**
The response indicates a limited understanding of the mathematical processes related to the task. The variable is defined correctly, but an incorrect process is shown in Part C by multiplying 8 and 3.50.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

Part A
Sue rented a truck from the company and was charged $82.50 when she returned the truck.
Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation \[0.50x + 25.00 = 82.50\]

Part B
On the lines provided, define what the variable in your equation represents.

\[x = \text{the number of miles Sue drove her truck}\]

Part C
Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.
How much, in dollars, does Sue pay for the gas?

**Show All Work**

\[
\begin{align*}
0.50x + 25.00 &= 82.50 \\
-25.00 &= -25.00 \\
0.50x &= 57.50 \\
\frac{0.50x}{0.50} &= \frac{57.50}{0.50} \\
x &= 115
\end{align*}
\]

**Answer** $50.31

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**Content - 3 pts** The response indicates a thorough understanding of the mathematical concepts by providing a correct equation in Part A and work to find 115 miles in Part C.

**Process - 3 pts** The response indicates a thorough understanding of the mathematical processes related to the task. The variable is correctly defined in Part B, and the correct process of dividing by 8 and multiplying by 3.50 is shown in Part C, along with correct calculations and rounding.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

**Part A**

Sue rented a truck from the company and was charged $82.50 when she returned the truck.

\[
\begin{align*}
25.00 \\
-25.00 \\
\hline
10.50 \\
-10.50 \\
\hline
15.00
\end{align*}
\]

Write an equation that can be used to determine the number of miles Sue drove the truck.

**Equation**

\[
\frac{15.00}{0.50} = 30 \text{ miles}
\]

**Part B**

On the lines provided, define what the variable in your equation represents.

The amount of miles she drove.

**Part C**

Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.

How much, in dollars, does Sue pay for the gas?

**Show All Work**

\[
\begin{align*}
3.50 \\times 9 \\hline
9.00
\end{align*}
\]

**Answer** $9.00

---

**Content - 1 pt** The response indicates a limited understanding of the mathematical concepts by providing an incorrect equation in Part A, but work to find 115 miles in Part C.

**Process - 1 pt** The response indicates a limited understanding of the mathematical processes related to the task. In Part A, the variable was “solved” to show 115 so credit is given for the variable being defined correctly in Part B. An incorrect process to find the total cost of gas is shown in Part C by multiplying 8 and 3.50.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

Part A
Sue rented a truck from the company and was charged $82.50 when she returned the truck.
Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation
$82.50 \div 0.50 = 165 \text{ miles}$

Part B
On the lines provided, define what the variable in your equation represents.

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Part C
Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.
How much, in dollars, does Sue pay for the gas?

Show All Work

\[
\begin{align*}
8 \times 21 & = 20.625 \\
20.625 \times 3.50 & = 72.50
\end{align*}
\]

Answer $72.50$

Content - 0 pts
The response indicates no understanding of the mathematical concepts by providing an invalid equation in Part A and does not find the 115 miles in Part C.

Process - 3 pts
The response indicates a limited understanding of the mathematical processes related to the task. There is no variable to define in Part B as no variable is written in the equation. The correct process of dividing by 8 and multiplying by 3.50 is shown in Part C; however, a calculation error is present when rounding was applied too early during the multiplication process (21 instead of 20.625).
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

**Part A**

Sue rented a truck from the company and was charged $82.50 when she returned the truck.

Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation: \( (82.5 - 25) \div 0.5 = x \)

**Part B**

On the lines provided, define what the variable in your equation represents.

\( x \) equals the number of miles that Sue drove in the truck.

**Part C**

Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.

How much, in dollars, does Sue pay for the gas?

**Show All Work**

\[
\begin{align*}
82.5 - 25 &= 57.5 \\
57.5 \div 0.5 &= 115 \\
115 \div 8 &= 14.375 \\
14.375 \times 3 &= 43.125 \\
\text{stores always round up} \quad \text{don't they?}
\end{align*}
\]

**Answer** $43.13

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**Content - 3 pts**

The response indicates a thorough understanding of the mathematical concepts by providing a correct equation in Part A and work to find 115 miles in Part C.

**Process - 2 pts**

The response indicates a partial understanding of the mathematical processes related to the task. The variable is defined correctly, and the process of dividing by 8 is correct; however, there is a calculation error present in the multiplication process because 3.5 was rounded to 3.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

Part A
Sue rented a truck from the company and was charged $82.50 when she returned the truck.
Write an equation that can be used to determine the number of miles Sue drove the truck.
Equation \[ 92.50 - 25 = 57.5 \div 0.50 = 115 \]

Part B
On the lines provided, define what the variable in your equation represents.
The variable in the equation is the number of miles driven.

Part C
Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.
How much, in dollars, does Sue pay for the gas?

Show All Work
\[
\begin{align*}
14.38 & \div 3.50 \\
50.3125 & \\
\end{align*}
\]

Answer $50.31

The response indicates a limited understanding of the mathematical concepts by providing an incorrect equation in Part A but work to find 115 miles in Part C.

The response indicates a partial understanding of the mathematical processes related to the task. In Part A, the variable was “solved” to show 115 so credit is given for the variable being defined correctly in Part B. The correct process of dividing by 8 and multiplying by 3.50 is shown in Part C; however, a calculation error is present in the multiplication process where rounding was applied early (14.38 instead of 14.375). Although the solution of 50.31 is written on the answer line, the work shown would have led to a solution of 50.33.
A truck rental company charges a flat fee of $25.00 to rent a truck and an additional $0.50 for each mile the truck is driven. There is no sales tax.

Part A

Sue rented a truck from the company and was charged $82.50 when she returned the truck.

Write an equation that can be used to determine the number of miles Sue drove the truck.

Equation \[ 82.50 = 25 + 0.5x \]

Part B

On the lines provided, define what the variable in your equation represents.

The variable represents (when solved) how many miles the truck was driven, 115 miles in this case.

Part C

Sue pays for the gas used by the truck. The truck travels 8 miles per gallon of gas. Sue pays $3.50 per gallon of gas, including sales tax.

How much, in dollars, does Sue pay for the gas?

Show All Work

\[
\begin{align*}
14.375 & \rightarrow 14.88 \times 2.50 = \$50.33 \times 0.07 \approx \$53.85 \\
\text{Answer:} \$53.85
\end{align*}
\]

The response indicates a thorough understanding of the mathematical concepts by providing a correct equation in Part A and work to find 115 miles in Part C.

The response indicates a limited understanding of the mathematical processes related to the task. The variable is identified correctly in Part B, and the correct process of dividing by 8 and multiplying by 3.50 is shown in Part C; however, a calculation error is present when rounding 14.375 to 14.38 was applied, and the additional step of multiplying by 0.07 renders the entire process incorrect.