Example 9

You own a car and a truck. The car has a fuel economy of 8.7 L/100 km. The truck has a fuel economy of 14.3 L/100 km. You need to drive to your mother's house, which is a round trip of 430 km. You already know that the car would be cheaper on gas, but you would like to take your truck as it is more comfortable.

a) How many liters of gas would be needed by the car for this trip?

CAR

Litres of gas used = Fuel economy × distance travelled

① Fuel economy = $\frac{8.7\text{L}}{100\text{km}}$

② Distance travelled 430km

$= \frac{8.7}{100} \times 430$

$= 37.41\text{L}$

b) How many liters of gas would be needed by the truck for this trip?

Litres of gas used = Fuel economy × distance travelled

TRUCK

$= \frac{14.3\text{L}}{100\text{km}} \times 430\text{km}$

$= 61.49\text{L}$

c) If the cost of gas is $1.129 per litre, determine how much you would SAVE by taking the car instead of the truck.

Cost of gas = # of Litres × cost per litre of gas

car → $37.41 \times 1.129 = \$42.24$

TRUCK → $61.49 \times 1.129 = \$69.42$

Savings: $69.42 - 42.24 = \$27.18$

Example 10: Exam-style Question

Myrtle and Zayden just went on a long trip in their car. They recorded the following information:

Distance Driven	Amount of Gas Used	Cost of Gas
4150 km	490 L	$588.00

a) Calculate the fuel economy for the trip in L/100 km.

Fuel economy = $\frac{\text{litres used} \times 100\text{km}}{\text{distance travelled}}$

$\rightarrow \frac{490 \times 100}{4150} = 11.81\text{ L/km}$

b) Calculate the cost of gas per litre for this trip.

Cost of gas per litre = $\frac{\text{cost of gas}}{\text{\# of litres use}} = \frac{588}{490}$

$= \$1.20$ per litre