

If you know the fuel economy of a car, you can predict how much gas it will use (in litres) to drive a certain distance. It is important to remember that this is a **prediction** – actual fuel economy will vary according to driving conditions, and how the driver decides to drive the car.

### Example 5: Using the Fuel Economy

You are looking to purchase a used car. You found a 2016 Honda Civic that you like, but before you buy it you want to check the fuel economy. You look online (<http://vehicles.nrcan.gc.ca>) and see that the fuel economy for this vehicle is 6.7 L/100 km.

- Fuel economy = L/100 km
- a) You drive on average 2100 km every month. Use the fuel economy to determine the approximate number of litres of fuel you will need to purchase each month.

Since it takes 6.7 L to travel 100 km,  
to travel 2100 km ∴

$$\frac{6.7 \text{ L}}{100 \text{ km}} = \frac{x \text{ L}}{2100} \Rightarrow \frac{2100 \times 6.7}{100} = \boxed{140.7 \text{ L}}$$

- b) If the average cost of fuel is \$1.15 per litre, calculate your monthly fuel expense for this car.

Monthly fuel expense = # of litres × cost per litre

$$= 140.7 \text{ L} \times 1.15$$

$$= \boxed{\$ 161.81}$$

### Example 6: Using the Fuel Economy

You keep careful records of how much fuel your minivan uses, and have determined that the fuel economy on the highway is 11.2 L/100 km. You are on a trip through rural Manitoba. You pulled into a gas station at 1:00 a.m. when your tank was almost completely empty, and it took 71 litres of gas to fill the tank. Determine if you will make it to the next open gas station if the next station is 550 km away.

Given: gas used = 71 litres

$$\text{Fuel economy} = \frac{11.2 \text{ L}}{100 \text{ km}}$$

Find: distance travelled.

① Use the ratio:  $\frac{\text{L}}{\text{km}} = \frac{\text{L}}{\text{km}}$

$$\frac{11.2 \text{ L}}{100 \text{ km}} = \frac{71 \text{ L}}{x \text{ km}} \Rightarrow x \text{ km} = \frac{71 \text{ L} \times 100 \text{ km}}{11.2 \text{ L}}$$

$$\text{Distance} = \boxed{633.93 \text{ km}}$$