

Answer on Question #51355 – Math – Algebra

Question

A tourist purchases a car in England and ships it home to the United States. The car sticker advertised that the car's fuel consumption was at the rate of 40 miles per gallon on the open road. The tourist does not realize that the U.K. gallon differs from the U.S. gallon:

1 U.K. gallon = 4.545 963 1 liters

1 U.S. gallon = 3.785 306 0 liters

For a trip of 780 miles (in the United States), how many gallons of fuel does **(a)** the mistaken tourist believe she needs and **(b)** the car actually require?

Solution

The number of gallon required for the 780 miles trip: $780 \text{ miles} / 40 \text{ miles} = 19.5$ gallons.

a) The tourist thinks that she needs $19.5 * 3.785306$ liters = 73.8 liters, because here we use U.S. gallons.

b) The car really requires $19.5 * 4.545963$ liters = 88.6 liters, because here we use U.K. gallons.