Exercise 7

The gas mileage M (in mi/gal) of a car is modeled by $M = N/G$, where N is the number of miles driven and G is the number of gallons of gas used.

(a) Find the gas mileage M for a car that drove 240 mi on 8 gal of gas.

(b) A car with a gas mileage $M = 25$ mi/gal is driven 175 mi. How many gallons of gas are used?

Solution

Part (a)

Divide the number of miles by the gallons of gas used to get the mileage.

$$M = \frac{240 \text{ mi}}{8 \text{ gal}} = 30 \ \frac{\text{mi}}{\text{gal}}$$

Part (b)

Solve the formula $M = N/G$ for G, the number of gallons of gas, and plug in the given numbers for N and M.

$$G = \frac{N}{M} = \frac{175 \ \cancel{\text{mi}}}{25 \ \frac{\cancel{\text{mi}}}{\text{gal}}} = 7 \text{ gal}$$

7 gallons of gas are used.