Challenge #4

Maryam Mirzakhani, a professor at Stanford University filled up the gas tank on her Prius in Venice Beach, California at a price of $3.85/gal. On the same day, Maria Agnesi filled the tank on her Fiat in Venice, Italy at a price of 1.72 Euro/Liter (1.72 €/l).

Assume the exchange rate at the time is $1.30/€

The gas in Venice, Italy is _______ times as expensive as the gas in Venice Beach California.
Challenge #4 Solution

Maryam Mirzakhani, a professor at Stanford University filled up the gas tank on her Prius in Venice Beach, California at a price of $3.85/gal. On the same day, Maria Agnesi filled the tank on her Fiat in Venice, Italy at a price of 1.72 Euro/Liter (1.72 €/L).

Assume the exchange rate at the time is $1.30/€

The gas in Venice, Italy is \( \frac{2.2}{1} \) times as expensive as the gas in Venice Beach California.

\[
\begin{align*}
\text{Italy:} & \quad \frac{1.72 \text{ €}}{L} \left( \frac{1 \text{ €}}{1 \text{ L}} \right) \left( \frac{0.9464 \text{ gal}}{1 \text{ L}} \right) \left( \frac{4 \text{ gal}}{1 \text{ L}} \right) \\
& \approx \frac{8.46}{\text{gal}} \\
\text{America:} & \quad \frac{3.85}{\text{gal}}
\end{align*}
\]

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\frac{\text{Italy}}{\text{America}} : \quad \frac{8.46}{\text{gal}} \div \frac{3.85}{\text{gal}} \approx 2.2
\]