Question: 1 cubic foot of water has a mass of 62.4 pounds, what is the density of water in g/cm^3 step by step (conversion factor)

a car has an EPA mileage rating of 3.0 x 10^1 miles per gallon, what is this rating in m L^-1?
Solution:

1. $1 ft^3$ = 28316.8 mL = 28316.8 sm^3;
   1 pound = 453.592 g;
   d (H_2O) = m/V = 453,592/28316.8 = 0.016 g/sm^3.
2. 1 gal = 3.785 L
   So a car has an EPA mileage rating of
   30/3.785 = 7.926 miles per litre; and 30/3785 = 0.008 miles per mililitre
   In mL^-1: 30*3785 = 113550.

Answer: 1. 0,016 g/sm^3;

    2. 7.926 miles per litre; in mL^-1= 113550.

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