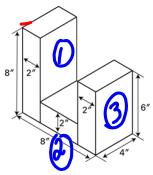
Volume/Capacity Applications

EXAMPLE #1...

Matthew was hired to produce 25 pairs of plastic bookends using the dimensions shown in the diagram below. The bookends will be constructed using an injection mould. Determine the cost of 25 pairs of bookends if the cost of plastic is $15.25 a cubic foot.



$\$15.25/ft^3$

$V_1 = l \times w \times h$
$= 2 \times 4 \times 8$
$= 64\ in^3$

$V_2 = l \times w \times h$
$= 4 \times 4 \times 2$
$= 32\ in^3$

$V_3 = l \times w \times h$
$= 2 \times 4 \times 6$
$= 48\ in^3$

$V_{Tot.} = 64 + 48 + 32 = 144\ in^3$

$144\ in^3 \times \left[\frac{1\ ft}{12\ in}\right]^3 = 0.083\ ft^3$

25 pairs = 50 bookends

$0.083 \times 50 = 4.16\ ft^3$

$5\ ft^3 \times \$15.25/ft^3$
$= \$76.25$

We are being creative & going to make them into little fish tanks → how much water in [mL] do we need?

$4.16\ ft^3 \times \left[\frac{1\ m}{3.2809\ ft}\right]^3 \times \frac{1000\ L}{1\ m^3} \times$

$\frac{1000\ mL}{1\ L} =$

$117802.4\ mL$

$117989.1\ mL$

EXAMPLE #2...

The gas tank of Rory's car can hold 60 litres of gas.

a) Rory is travelling in Colorado, USA, and needs to fill up his tank. The cost of gas is $3.49/gallon. How much will it cost him to fill up, assuming the tank is completely empty?

b) If Rory took the same car to England, where gas costs $8.01/gal, how much would it cost him to fill up the tank?

$60\text{L} = 15.85\text{ gal}$?

$60\text{L} \times \frac{1\text{ gal}}{3.785\text{L}}$

$15.85\text{ gal} \times \$3.49/\text{gal}$

$= \$55.32$

$\$8.01/\text{gal}$.

$60\text{L} \times \frac{1\text{ gal}}{4.546\text{L}}$

13.2 gal

EXAMPLE #3...

Gwen is following a recipe for pancakes that calls for 10 cups of flour, $1\frac{1}{4}$ cups of sugar, and 2.5 tsp of baking soda. What will the total volume of the dry goods be in mL if she makes a double batch?

10 cups of flour
$1\frac{1}{4}$ cups sugar
2.5 tsp baking soda

×2 → 20 cups, 2.5 cups, 5 tsp

$\therefore 22.5\text{ cups} \times \frac{250\text{ mL}}{1\text{ cups}} = 5625\text{ mL}$

$5\text{ tsp} \times \frac{5\text{ mL}}{1\text{ tsp}} = 25\text{ mL}$

$5625 + 25\text{ mL} = 5650\text{ mL}$

HOMEWORK...

NOTE: Use US Imperial for pt, qt & gal

1) page 182 #1 - 5 *

2) Review Worksheet - Converting Imp_Metric.docx } 11-20.

Attachments

GMF_10_-_Chp._4_Tables_and_Formulas.docx

Worksheet - Converting Capacity in Imp.docx

Worksheet - Converting Volumes Imp_Metric.docx

Review Worksheet - Converting Imp_Metric.docx

Review - Chapter 4 Sample Test.pdf