

Complete the table. **SOLUTIONS...**

Object	mm	ft	yd	cm	in	m
Thickness of hardwood floor	19	0.0625	0.021	1.9cm	0.75	0.019
Height of a room	2743.2	9	3	274.32	108	2.74
Width of a football field	50292	165	55	5029.2	1980	50.29
Length of a pencil	180	0.59	0.2	18	7.09	0.18
Height of a table	736.6	2.42	0.81	73.66	29	0.74
A home run in baseball	135000	442.91	147.64	13500	5314.96	135

$$9 \text{ ft} \times \frac{1 \text{ m}}{3.2808 \text{ ft}} \times \frac{100 \text{ cm}}{1 \text{ m}} \times \frac{10 \text{ mm}}{1 \text{ cm}}$$

1. A low bridge has a posted maximum vehicle height of 7'6". Your truck is 2.3 m high. Will it fit under the bridge?
2. A wooden dowel is 0.75 m long. What is its length in centimetres? In inches? You need to record the length of the dowel on a sketch for a carpentry project. Which unit of measurement will you choose to label the sketch with, and why?
3. Valerie wants to apply for a driver's licence. The application asks her to state her height in cm. Valerie is 5'8" tall. What is her height in cm?
4. Sandy has been asked to give an estimate for replacing a countertop in a client's kitchen. The countertop measures 2' x 6' and the client wants Sandy to install 4" x 4" tiles that cost \$3.50 each. Sandy has estimated her labour charge will be \$350.00. What is the total cost of tiles and labour?

① 7'6" → 7 × 12 + 6
90"

$$90 \text{ in} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \times \frac{1 \text{ m}}{100 \text{ cm}} =$$

Truck vs Bridge
2.29m 2.3m
It fits

4. Sandy has been asked to give an estimate for replacing a countertop in a client's kitchen. The countertop measures 2' x 6' and the client wants Sandy to install 4" x 4" tiles that cost \$3.50 each. Sandy has estimated her labour charge will be \$350.00. What is the total cost of tiles and labour?

2' 24"

6' 72"

$$\text{Area} = 24 \times 72$$

$$= 1728 \text{ in}^2$$

↑
Total

4" 4"

↑ $A = 4^2$

$= 16 \text{ in}^2$

↑
Tile

← \$ 3.50 each

+ \$ 350

$$\# \text{ of Tiles} = \frac{1728}{16}$$

$$= 108 \text{ tiles}$$

$$\text{Cost} = \$3.50 \times 108 + 350$$

$$= \$728$$

A = bh Converting Squared Units...

Option #1 - Convert BEFORE area calculation.

EX #1: How many squared metres?



4 ft
= 1.2 m

- 1 m = 1.0936 yd
- 1 m = 3.2808 ft
- 1 mi. = 1.6093 km
- 1 in. = 2.54 cm

12 ft $\times \frac{1 \text{ m}}{3.2808 \text{ ft}}$
= 3.7 m

$A = 3.7 \times 1.2$
 $A = 4.4 \text{ m}^2$

Option #2 - Convert AFTER area calculation.

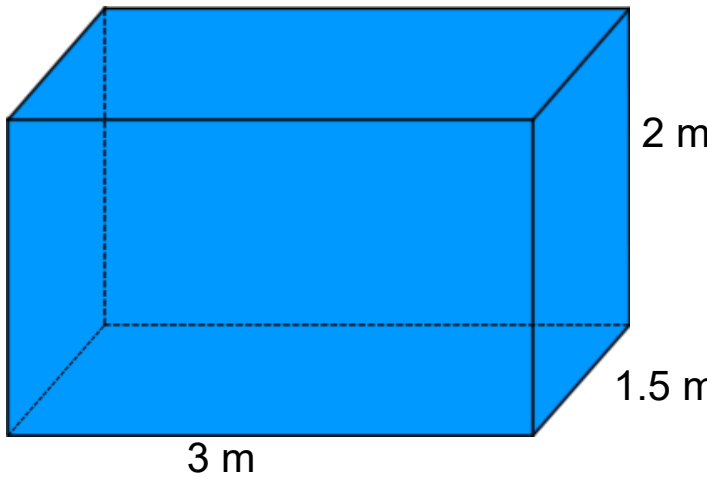
$A = 12 \times 4$
= 48 ft²

$48 \text{ ft}^2 \times \frac{1 \text{ m}^2}{3.2808^2 \text{ ft}^2} = 4.5 \text{ m}^2$

RULE: When converting squared units...
SQUARE THE CONVERTER!!!

What about cubed units???

EX #2: How many cubic yards?



$$V = lwh$$

$$= 3(1.5)(2)$$

$$= 9 \text{ m}^3$$

$$9 \text{ m}^3 \times \frac{1.0936 \text{ yd}^3}{1 \text{ m}^3} = 11.8 \text{ yd}^3$$

**RULE: When converting cubed units...
CUBE THE CONVERTER!!!**

MORE EXAMPLES...

1) $22 \text{ m}^2 = \underline{236.8} \text{ ft}^2$

$22 \text{ m}^2 \times \frac{3.2808^2 \text{ ft}^2}{1 \text{ m}^2}$

2) $1.75 \text{ mi}^2 = \underline{4.53} \text{ km}^2$

$1.75 \text{ mi}^2 \times \frac{1.6093^2 \text{ km}^2}{1 \text{ mi}^2}$

3) $2400 \text{ cm}^2 = \underline{372} \text{ in}^2$

$2400 \text{ cm}^2 \times \frac{1 \text{ in}^2}{2.54^2 \text{ cm}^2}$

4) $750 \text{ yd}^2 = \underline{\hspace{2cm}} \text{ m}^2$

5) $315 \text{ yd}^3 = \underline{\hspace{2cm}} \text{ m}^3$

6) $15 \text{ m}^3 = \underline{\hspace{2cm}} \text{ ft}^3$


7) $0.5 \text{ mi}^3 = \underline{\hspace{2cm}} \text{ km}^3$

8) $2450 \text{ mm}^3 = \underline{0.15} \text{ in}^3$

$2450 \text{ mm}^3 \times \frac{1 \text{ cm}^3}{10^3 \text{ mm}^3} \times \frac{1 \text{ in}^3}{2.54^3 \text{ cm}^3}$

HOMWORK...

even #

 Worksheet - Converting Squared and Cubed Units.docx

page 159: #5, 7, 9

Attachments

Worksheet - Converting Squared and Cubed Units.docx