

Section 2.7 Expressing Metric units in Imperial units

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Try These

i. $4 \text{ yd} = 12 \text{ ft}$

ii. $9 \text{ ft} = 108 \text{ in.}$

iii. $38.5 \text{ km} = 38500 \text{ m}$

iv. $852 \text{ mm} = 0.852 \text{ m}$

- Sometimes you need to know the equivalent of a length or distance measured in metric units in imperial units.
- This chart shows the approximate relationships among common units.

Metric to Imperial

1 mm \cong 0.039 in.

1 cm \cong 0.39 in.

1 m \cong 1.09 yd

1 km \cong 0.62 mile

1. What would you multiply a measurement given in centimeters by to express its measure in inches? 0.39
2. What would you multiply a measurement given in meters by to express its measure in yards? 1.09
3. What would you multiply a distance given in kilometers by to express its distance in miles? 0.62

Example 1: Asif Plans to run in a cross-country race. The length of the course is 6.7 km. How far is that in miles?

Solution:

What is 6.7 km expressed in miles

1 km \cong 0.62 mi, so 6.7 km x 0.62 mi/km \cong 4.154 mi

Asif ran 4.2 miles.

Example 2: The diameter of a spark plug is 14 mm. What is this measure in inches?

Solution 1:

A. $1 \text{ mm} \cong 0.039 \text{ in.}$, so $14 \text{ mm} \times 0.039 \text{ in./mm} \cong 0.546 \text{ in.}$

Solution 2:

Set up equivalent ratios and solve the equation.

- $\frac{0.039 \text{ in.}}{1 \text{ mm}} = \frac{? \text{ in.}}{14 \text{ mm}}$
- $? \cong \frac{0.039 \text{ in.}}{1 \text{ mm}} \times 14 \text{ mm}$
- $? \cong 0.546 \text{ in.}$

Assignment

- A&W 10 Page 59 to 60 # 1, 3, 4, 6, 8 and 10
- A&W 11 Page 59 to 60 # 1-4, 6-8, 1 & 11