

Sept 9

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#5.



$$4' 3'' = 4 \times 12 + 3$$

$$= 51''$$

$$8 \times 51'' = 408''$$

$$2\pi r = 2\pi(51)$$

$$= 320.4''$$

$$\text{Amt edging} = 408'' + 320.4''$$

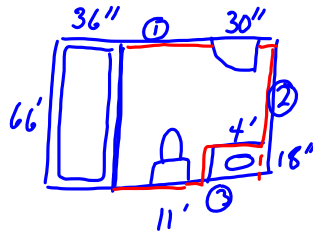
$$= 728.4''$$

$$\frac{728.4''}{12} = 60.7$$

$$\frac{60.7'}{20} = 3.035 \text{ (4 rolls)}$$

$$4 \times 9.99 = \$39.96$$

#8.



$$11' \times 12' = 132''$$

$$\textcircled{1} 132 - 30 - 36 = 66''$$

$$\textcircled{2} 66''$$

$$\textcircled{3} 132'' - 36 = 96''$$

$$\text{Total Molding} = 66 + 66 + 96$$

$$= 228''$$

$$\text{Money}_{\text{Time}} = \$45.00/\text{hr} \times 2.5 \text{ hr}$$

$$= \$112.50$$

$$\text{Material} = 228 \text{ in} \times \frac{1 \text{ ft}}{12 \text{ in}} \times \$6.50/\text{ft}$$

$$= \$23.50$$

$$\text{Markup} = \$23.50 \times 1.15$$

$$= \$27.025$$

$$= \$27.03$$

$$\text{Total Cost} = \$23.50 + \$27.03$$

$$= \$50.53$$



4.2 - Converting Measurements

Make Connections

Two cars are driven in opposite directions from a Canada/United States border crossing.

In one hour, Hana drove 62 mi. south while Farrin drove 98 km north.

How could you determine which vehicle travelled farther from the border?

$$62 \text{ mi} \times \frac{1.6093 \text{ Km}}{1 \text{ mi}} = 99.7766 \text{ Km}$$

Hana drove further



THE CONVERSION FACTORS BETWEEN SI AND IMPERIAL UNITS

<i>SI to Imperial</i>	<i>Imperial to SI</i>
1 mm = 0.0394 in	1 in = 25.4 mm
1 cm = 0.3937 in	1 inch = 2.54 cm
1 m = 3.2808 ft	1 ft = 0.3048 m
1 m = 1.0936 yd	1 yd = 0.9144 m
1 km = 0.6214 mi	1 mi = 1.6093 km

IMPORTANT CONVERSIONS...

$$1 \text{ m} = 1.0936 \text{ yd}$$

$$1 \text{ mi.} = 1.6093 \text{ km}$$

$$1 \text{ in.} = 2.54 \text{ cm}$$

PRACTICE: Converting IMPERIAL to METRIC

Convert each measurement. Answer to the nearest tenth.

- 16 in. to centimetres
- 4 ft. to metres
- 5 yd. to metres
- 1650 yd. to kilometres
- 6 mi. to kilometres
- 2 in. to millimetres

$$a) 16 \text{ in} \times \frac{2.54 \text{ cm}}{1 \text{ in}} = 40.64 \text{ cm}$$

$$b) 4 \text{ ft} \times \frac{1 \text{ yd}}{3 \text{ ft}} \times \frac{1 \text{ m}}{1.0936 \text{ yd}} = 1.22 \text{ m}$$

$$c) 5 \text{ yd} \times \frac{1 \text{ m}}{1.0936 \text{ yd}} = 4.57 \text{ m}$$

$$d) 1650 \text{ yd} \times \frac{1 \text{ mi}}{1760 \text{ yd}} \times \frac{1.6093 \text{ km}}{1 \text{ mi}} = 1.51 \text{ km}$$

$$e) 6 \text{ mi} \times \frac{1.6093 \text{ km}}{1 \text{ mi}} = 9.66 \text{ km}$$

$$f) 2 \text{ in} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \times \frac{10 \text{ mm}}{1 \text{ cm}} = 50.8 \text{ mm}$$

Answers will vary depending on the conversion

4. a) 40.6 cm b) 1.2 m
c) 4.6 m d) 1.5 km
e) 9.7 km f) 50.8 mm

1.3 Relating SI and Imperial Units

PRACTICE: Converting METRIC to IMPERIAL

Convert each measurement.

- a) 25 mm to the nearest inch
- b) 2.5 m to the nearest foot
- c) 10 m to the nearest yard
- d) 150 km to the nearest mile

$$a) 25 \text{ mm} \times \frac{1 \text{ cm}}{10 \text{ mm}} \times \frac{1 \text{ in}}{2.54 \text{ cm}} = 1.0 \text{ in}$$

$$b) 2.5 \text{ m} \times \frac{1.0936 \text{ yd}}{1 \text{ m}} \times \frac{3 \text{ ft}}{1 \text{ yd}} = 8.2 \text{ ft}$$

$$c) 10 \text{ m} \times \frac{1.0936 \text{ yd}}{1 \text{ m}} = 10.936 \text{ yd} \\ = 10.9 \text{ yd}$$

$$d) 150 \text{ km} \times \frac{1 \text{ mi}}{1.6093 \text{ km}} = 93.2 \text{ mi}$$

Answers will vary depending on the conversion factor used.

- 5. a) 1 in.
- b) 8 ft.
- c) 11 yd.
- d) 93 mi.

1.3 Relating SI and Imperial Units

Example 1 Converting from Metres to Feet

A bowling lane is approximately 19 m long.

What is this measurement to the nearest foot?

 **SOLUTION** A length of 19 m is approximately 62 ft.

(Erase to reveal)

$$19 \text{ m} \times \frac{1.0936 \text{ yd}}{1 \text{ m}} \times \frac{3 \text{ ft}}{1 \text{ yd}} = 62.3 \text{ ft}$$

1.3 Relating SI and Imperial Units

