

# Conversions Between SI and Imperial

Conversion Factors Between SI and Imperial Units	
SI to Imperial	Imperial to SI
1 mm = _____ in 0.0394	1 in = _____ mm 25.4
1 cm = _____ in 0.394	1 in = _____ cm 2.54
1 m = _____ ft 3.281	1 ft = _____ m 0.3048
1 m = 1.0936 yd	1 yd = _____ m 0.914
1 km = _____ mi 0.621	1 mi = 1.6093 km

To convert between systems, use a proportion.

7 yards to metres

$$\frac{1 \text{ m}}{1.0936 \text{ yd}} = \frac{x}{7 \text{ yd}}$$

$$x = 6.4 \text{ m}$$

100 km to miles

$$\frac{1 \text{ km}}{0.621 \text{ mi}} = \frac{100}{x}$$

$$x = 62.1 \text{ mi}$$

5 cm to inches

$$\frac{1 \text{ cm}}{0.394 \text{ in}} = \frac{5}{x}$$

$$x = 1.97 \text{ in}$$

3 feet to centimetres

$$\downarrow$$

$$12 \times 3 = 36 \text{ in}$$

$$\frac{1 \text{ in}}{2.54 \text{ cm}} = \frac{36}{x}$$

$$x = 91.44 \text{ cm}$$

16 m to feet

$$\frac{1 \text{ ft}}{0.3048 \text{ m}} = \frac{x}{16}$$

$$x = 52.49 \text{ ft}$$

10 feet to metres

$$\frac{1 \text{ ft}}{0.3048 \text{ m}} = \frac{10}{x}$$

$$x = 3.05 \text{ m}$$

$$6'' = \frac{1}{2} \text{ a foot}$$

Examples:

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?



bridge 7'5"

$$\frac{1 \text{ m}}{3.281 \text{ ft}} = \frac{2.3 \text{ m}}{x}$$

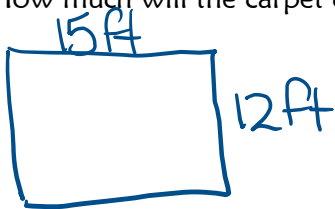
$$x = 7.54 \text{ ft (truck)}$$

↑ taller than the bridge.

\*won't fit

~~46 ft~~

2. Giselle would like to replace the carpet in her living room. She used her imperial tape measure to measure the room, and the dimensions were 12 ft by 15 ft. When she went to the carpet store, she found the price of the carpet was \$24.99/m<sup>2</sup> (taxes included). She cannot order less than a full square metre of carpet. How much carpet should she order? How much will the carpet cost?



$$\frac{1 \text{ ft}}{0.3048 \text{ m}} = \frac{15 \text{ ft}}{x}$$

$$x = 4.57 \text{ m}$$

$$4.57 \times 3.66 = 16.73 \text{ m}^2$$

$$\downarrow$$

$$17 \text{ m}^2$$

$$\frac{1 \text{ ft}}{0.3048 \text{ m}} = \frac{12 \text{ ft}}{x}$$

$$x = 3.66 \text{ m}$$



$$17 \times \$24.99 = \boxed{\$424.83}$$