

Relating SI and Imperial Units

In 1976, Canada adopted the use of the SI (Système Internationale d'Unité) system to measure length. Some of the most common SI units are listed in the table below.

Unit	Abbreviation	Multiplying Factor
Kilometre	km	1000
Hectometre	hm	100
Decametre	dam	10
Metre	m	1
Decimetre	dm	0.1
Centimetre	cm	0.01
Millimetre	mm	0.001

Various measuring instruments such as a ruler, metre stick, measuring tape, and calipers can accurately determine distances in standard units. We may also use personal referents to estimate measurements.

Each measurement in the SI system relates to a corresponding measurement in the imperial system. Some of the relationships are exact (1 in. = 2.54 cm) while others are approximate (1 cm = 0.3937 in.). The most common conversions are listed in the table below.

SI Units to Imperial Units	Imperial Units to SI Units
1 mm = 0.0394 in.	1 in. = 2.54 cm
1 cm = 0.3937 in.	1 ft. = 30.48 cm
1 m = 39.37 in.	1 ft. = 0.3048 m
1 m = 3.281 ft.	1 yd. = 91.44 cm
1 m = 1.094 yd.	1 yd. = 0.9144 m
1 km = 0.6214 mi.	1 mi. = 1.609 km

Example 1: Converting from Imperial Units to SI Units

Q. Convert:

- a) 17 ft. to m
- b) 5 mi. to km

A.

Example 2: Converting from SI Units to Imperial Units

Q. Convert:

- a) 16 cm to in.
- b) 58 m to ft.

A.

Example 3: Problem Solving with Conversions

Q. The school librarian needs to reach a shelf that is 1.7 metres above the floor. The librarian can only reach to 5 ft. 11 in. from the floor. Will the librarian be able to reach the shelf?

A.