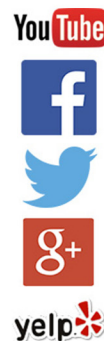




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Metric System Quiz: Solutions

A. Use a prefix to express the measurement.

$1 \times 10^6 \text{ m}$	1 Mm	$1 \times 10^{-6} \text{ m}$	1 μm
$1 \times 10^{-3} \text{ m}$	1 mm	$1 \times 10^3 \text{ m}$	1 km
$1 \times 10^{-9} \text{ m}$	1 nm	$1 \times 10^{-2} \text{ m}$	1 cm

B. Expand the measurement.

1 μm	$1 \times 10^{-6} \text{ m}$	1 km	$1 \times 10^3 \text{ m}$
1 hm	$1 \times 10^2 \text{ m}$	1 Gm	$1 \times 10^9 \text{ m}$
1 pm	$1 \times 10^{-12} \text{ m}$	1 nm	$1 \times 10^{-9} \text{ m}$

C. Convert the following measurements using scientific notation.

$$3.58 \text{ pm} = (3.58 \times 10^{-12} \text{ m}) \cdot (100 \text{ cm} / \text{m}) = 3.58 \times 10^{-10} \text{ cm}$$

$$2.38 \times 10^6 \mu\text{m} = (2.38 \times 10^6) \cdot (1 \times 10^{-6} \text{ m}) \cdot (100 \text{ cm} / \text{m}) = 2.38 \times 10^2 \text{ cm}$$

$$6.159 \times 10^2 \text{ km} = (6.159 \times 10^2) \cdot (1 \times 10^3 \text{ m}) \cdot (1 \text{ Mm} / 1 \times 10^6 \text{ m}) = 6.159 \times 10^{-1} \text{ Mm}$$

$$8.31 \text{ cm} = (8.31 \text{ cm}) \cdot (10 \text{ mm} / \text{cm}) = 8.31 \times 10^1 \text{ mm}$$

$$7.8 \times 10^{14} \text{ cm} = (7.80 \times 10^{14} \text{ cm}) \cdot (1 \text{ m} / 100 \text{ cm}) \cdot (1 \text{ Tm} / 1 \times 10^{12} \text{ m}) = 7.8 \text{ Tm}$$