MIL4: Metric Conversions & Exponents

1 meter

$\frac{1}{10}$ meter = 0.1 meter = 1 decimeter

$\frac{1}{100}$ meter = 0.01 meter = 1 centimeter

$\frac{1}{1000}$ meter = 0.001 meter = 1 millimeter

meter	centimeter	millimeter
2	200	2000
1.37	137	1370
2.6	260	2600

meter to centimeter : multiply by 100 or 10^2

$2 \times 100 = 2 \times 10^2 = 200$

meter to millimeter : multiply by 1000 or 10^3

$2 \times 1000 = 2 \times 10^3 = 2000$

centimeter to millimeter : multiply by 10 or 10^1

$200 \times 10 = 200 \times 10^1 = 2000$

$1.37 \times 10^2 = 137$

$1.37 \times 10^3 = 1370$

$2.6 \times 100 = 260$

$2.6 \times 10^3 = 2600$

millimeter	centimeter	meter
2000	200	2
1370	137	1.37
2600	260	2.6

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millimeter to centimeter : divide by 10 or 10^1

$2000 \div 10^1 = 200$

millimeter to meter : divide by 1000 or 10^3

$2000 \div 10^3 = 2$

centimeter to meter : divide by 100 or 10^2

$200 \div 10^2 = 2$

$1370 \div 10^1 = 137$

$1370 \div 10^3 = 1.37$

$2600 \div 10^1 = 260$

$2600 \div 10^3 = 2.6$

Name _____ Date _____

1. Convert and write an equation with an exponent. Use your meter strip when it helps you.

a. 3 meters to centimeters 3 m = 300 cm $3 \times 10^2 = 300$

b. 105 centimeters to meters 105 cm = 1.05 m $105 \div 10^2$

c. 1.68 meters to centimeters 1.68 m = 168 cm 1.68×10^2

d. 80 centimeters to meters _____ cm = _____ m _____

e. 9.2 meters to centimeters _____ m = _____ cm _____

f. 4 centimeters to meters _____ cm = _____ m _____

g. In the space below, list the letters of the problems where larger units are converted to smaller units.

2. Convert using an equation with an exponent. Use your meter strip when it helps you.

a. 3 meters to millimeters 3 m = 3000 mm 3×10^3

b. 1.2 meters to millimeters _____ m = _____ mm _____

c. 1,020 millimeters to meters 1020 mm = 1.02 m $1020 \div 10^3$

d. 97 millimeters to meters _____ mm = _____ m _____

e. 7.28 meters to millimeters _____ m = _____ mm _____

f. 4 millimeters to meters _____ mm = _____ m _____

g. In the space below, list the letters of the problems where smaller units are converted to larger units.