

# Unit Analysis

Write the abbreviations for each of the following:

a) milligram

e) centiliter

b) kilogram

f) kilometer

c) microgram

g) gigameter

d) megaliter

h) nanometer

Write the name of the metric unit abbreviated below:

a) mm

e) mL

b) cg

f)  $\mu\text{m}$

c) kg

g) ng

d) cm

h) ML

Convert the following using unit analysis:

3.5 mm  $\Rightarrow$  cm

2100 m  $\Rightarrow$  km

14.2 cm  $\Rightarrow$  mm

1 m = \_\_\_\_\_ mm

5.34 cm  $\Rightarrow$  mm

450 nm = \_\_\_\_\_ m

57.4 m  $\Rightarrow$  km

1.5 km = \_\_\_\_\_ m

How many minutes in 6 hours?

How many days in 7 weeks?

How many years in 3 Decades?

How many weeks in 4 years?

How many Centuries in 4 Millenia?

How many seconds in 3 minutes?

Convert the following using unit analysis:

65000 lb into ounces

4.90  $\mu\text{g}$  into ng

65 L into mL

12 L into mL

4500  $\text{ft}^3$  into  $\text{yd}^3$

9.55 ML into L

30 mg into g

20 000 kL into ML

34 500 mg into kg

0.000 004 4 ML into mL

0.000 025 25 g into  $\mu\text{g}$

## Unit Conversion

$$\frac{? \text{ miles}}{1 \text{ hour}} \times \left(\frac{1 \text{ hour}}{60 \text{ min}}\right) \times \left(\frac{1 \text{ min}}{60 \text{ s}}\right) \left(\frac{1.6 \text{ km}}{1 \text{ miles}}\right) \times \left(\frac{1000 \text{ m}}{1 \text{ km}}\right)$$

Mischo, of Vernon, British Columbia, held the world record as the fastest downhill skateboarder at  $36.11 \frac{m}{s}$ . To share Erban's record with an American friend, change the measurement to  $\frac{ft}{s}$ .

During harvest, Sven drives his combine at  $6.0 \frac{km}{hr}$ . He will drive 29.0 km to harvest his crop. How many minutes will this take Christian to complete if he goes without any stops?

Darren Powell holds the world record for speed snowboarding, at  $56.08 \frac{m}{s}$ . Calculate how long it would take him to complete a 500-m race.

Show what 17.1 m/s in miles/minute

Show which is faster, 25 m/s or 110 km/h

Show what 6.8 L/s is in mL/h

50 km/h = \_\_\_\_\_ m/s

1 cm/s = \_\_\_\_\_ km/min

A skateboarder was moving at a speed of 7.8 m/s. How many kilometers could he travel in one day?

A Swedish motorist was caught speeding on a highway in Switzerland. He was driving close to 187.5 mi/h! That is almost the distance from Edmonton to Calgary, and he would have gone this distance in about ONE hour. How fast was he travelling in m/s?

Ivana works with a highway repair crew. She operates a heat lance that blasts hot air at 3000 ft/s to dry moisture from overnight dew or rain. How fast does the hot air move in meters per second?

Rob averaged 14.30 km/day on his skateboard. Skateboarding isn't the most efficient method to move quickly over long distances, but it is a healthy way to travel. How fast was he travelling in m/s?

The corkscrew roller coaster at the Pacific National Exhibition in Vancouver has a maximum speed of  $64 \frac{km}{hr}$ . How far does it travel in 7.5 s?

Usain Bolt set a new world record for the 100 m dash in 2009 in Berlin. He ran 100 m in 9.58 s. What was Bolt's average speed in km/hr?