

Mathematics 10-3 Formula Sheet

MEASUREMENT

S.I. UNITS TO S.I. UNITS

← When converting smaller to larger units **DIVIDE**

S.I. (Metric) Unit Conversions						
<u>Kilo</u>	<u>Hecto</u>	<u>Deca</u>	<u>Base</u>	<u>Deci</u>	<u>Centi</u>	<u>Milli</u>
km kilometre	Hm hectometre	Dam decametre	m metre	dm decimetre	cm centimetre	mm millimetre
kg kilogram	Hg hectogram	Dag decagram	g gram	dg decigram	cg centigram	mg milligram
kL kilolitre	HL hectoliter	DaL decalitre	L litre	dL decilitre	cL centilitre	mL millilitre
1000	100	10	1	1/10	1/100	1/1000

→ When converting larger to smaller units **MULTIPLY**

S.I. (Metric)	Imperial	Imperial to Metric
1000 g = 1 kg 1000 kg = 1 tonne (t) 1000 cm ³ = 1 L 1000 mL = 1 L	1 lbs = 16 oz 2000 lbs = 1 ton (tn)	1 lb = 0.45 kg 1 oz = 28.3 g 1 tn = 0.9 t 2.2 lbs = 1 kg

IMPERIAL TO IMPERIAL CONVERSION & S.I. UNITS TO IMPERIAL UNITS

Relationships between common Imperial Units	Relationships between Common Imperial Units and Metric Units	
Length	1 inch = 2.54 cm	1 cm = 0.3937 inches
• 1 mile = 1760 yards = 5280 feet	1 mile = 1.609 km	1 km = 0.6214 miles
• 1 yard = 3 feet = 36 inches	1 yard = 0.9144 m	1 m = 1.0936 yards
• 1 foot = 12 inches	1 foot = 0.3048 m	1 m = 3.2808 feet

Income Calculations

Pay Period	# of Times a Year
Annually	1
Monthly	12
Semi-monthly	24
Weekly	52
Bi-weekly	26

Temperature Conversions

When you are **provided** with the Celsius temperature and **asked** for the temperature in Fahrenheit use this formula:

$$F = \frac{9}{5}C + 32$$

When you are **provided** with the Fahrenheit temperature and **asked** for the temperature in Celsius use this formula:

$$C = \frac{5}{9}(F - 32)$$

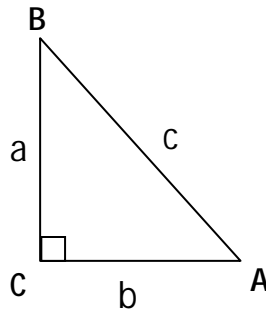
TRIGONOMETRY

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

or

$$\text{Leg}^2 + \text{Leg}^2 = \text{Hypotenuse}^2$$



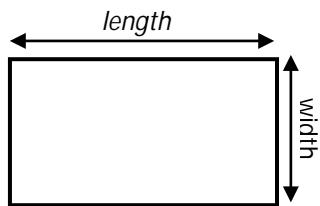
Trigonometric Ratios

$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}} \quad \sin A = \frac{\text{opp}}{\text{hyp}}$$

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} \quad \cos A = \frac{\text{adj}}{\text{hyp}}$$

$$\tan A = \frac{\text{opposite}}{\text{adjacent}} \quad \tan A = \frac{\text{opp}}{\text{adj}}$$

2-D SHAPES

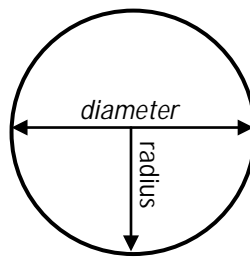


Area

$$A = l \cdot w$$

Perimeter

$$P = 2l + 2w$$



Area

$$A = \pi r^2$$

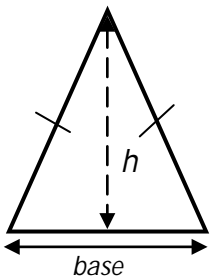
$$r = \frac{d}{2}$$

Circumference

$$C = \pi d$$

$$C = 2\pi r$$

$$d = 2r$$

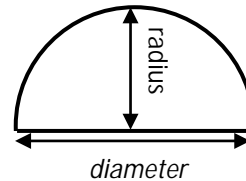
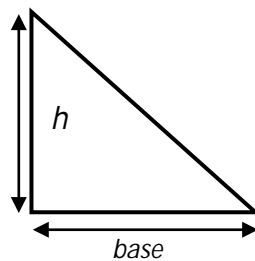


Perimeter

P = add up all sides
* don't include height

Area

$$A = \frac{b \cdot h}{2}$$



Area

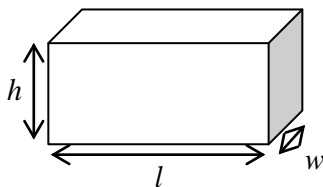
$$A = \frac{1}{2} \pi r^2$$

Perimeter

$$P = \frac{1}{2} \pi d + d$$

Surface Area: the combined area of all faces of a 3-D object. (units^2)

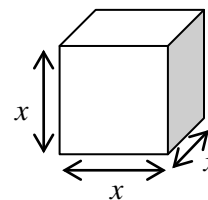
Volume: the number of cubic units contained in a solid. (units^3)



$$SA = 2lw + 2wh + 2lh$$

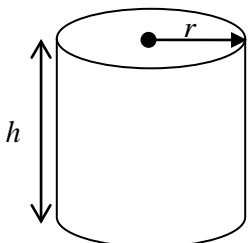
$$SA = 2(lw + wh + lh)$$

$$V = lwh$$



$$SA = 6x^2$$

$$V = x^3$$



$$SA = 2\pi r^2 + 2\pi rh$$

$$V = \pi r^2 h$$