

Math 10C Final Exam Formulas Sheet (2012)

Standard Lengths of Imperial Measurement

$$1 \text{ mi.} = 1760 \text{ yd.} \quad 1 \text{ mi.} = 5280 \text{ ft.} \quad 1 \text{ yd.} = 3 \text{ ft.} \quad 1 \text{ yd.} = 36 \text{ in.} \quad 1 \text{ ft.} = 12 \text{ in.} \quad 1 \text{ mi}^2 = 640 \text{ acres}$$

Standard Lengths of SI Measurement

$$1 \text{ cm} = 10 \text{ mm} \quad 1000 \text{ m} = 1 \text{ km} \quad 100 \text{ cm} = 1 \text{ m}$$

The table below shows some approximate (and exact) relationships between imperial and SI Units of measure.

SI Units to Imperial Units	Imperial Units to SI Units
$1 \text{ mm} \cong \frac{4}{100} \text{ in.}$	$1 \text{ in.} \cong 2.5 \text{ cm}$ $1 \text{ in.} = 2.54 \text{ cm}$
$1 \text{ cm} \cong \frac{4}{10} \text{ in}$	$1 \text{ ft.} \cong 30 \text{ cm}$ $1 \text{ ft.} \cong 0.3 \text{ m}$
$1 \text{ m} \cong 39 \text{ in.}$ $1 \text{ m} \cong 3\frac{1}{4} \text{ ft.}$	$1 \text{ yd.} \cong 90 \text{ cm}$ $1 \text{ yd.} \cong 0.9 \text{ m}$ $1 \text{ yd.} = 0.9144 \text{ m}$ or $1 \text{ yd.} = 91.44 \text{ cm}$
$1 \text{ km} \cong \frac{6}{10} \text{ mi.}$	$1 \text{ mi.} \cong 1.6 \text{ km}$

Surface Area and Volume Formulas

NAME	SURFACE AREA	VOLUME
Cone	$SA = \pi r^2 + \pi rs$	$V = \frac{\pi r^2 h}{3}$
Cylinder	$SA = 2\pi r^2 + 2\pi rh$	$V = \pi r^2 h$
Pyramids	SA = area of one base + area of triangular sides	$V = \frac{B \times h}{3}$ Where B is the area of the base
Prisms	SA = area of two bases + area of rectangular sides	$V = B \times h$ Where B is the area of the base
Spheres	$SA = 4\pi r^2$	$V = \frac{4\pi r^3}{3}$
Hemi-sphere	$SA = 3\pi r^2$	$V = \frac{4\pi r^3}{6}$

General Formulas from Math 10C

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad y = mx + b \quad Ax + By + C = 0 \quad m = \frac{y - y_1}{x - x_1} \quad (y - y_1) = m(x - x_1)$$

$$\sin \theta = \frac{\text{opp}}{\text{hyp}} \quad \cos \theta = \frac{\text{adj}}{\text{hyp}} \quad \tan \theta = \frac{\text{opp}}{\text{adj}} \quad \text{pythagorean theorem } a^2 + b^2 = c^2$$