

# MATH REFERENCE SHEET

Use 3.14 or  $\frac{22}{7}$  for  $\pi$ .

## Plane Figures: Perimeters and Areas

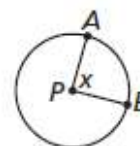
Name	Notation	Circumference (C) Perimeter (P)	Area (A)
Circle	$r$ = radius $d$ = diameter	$C = \pi d$ or $C = 2\pi r$	$A = \pi r^2$
Parallelogram	$a, b$ = sides $h$ = height	$P = 2(a + b)$	$A = bh$
Rectangle	$l$ = length $w$ = width	$P = 2(l + w)$	$A = lw$
Trapezoid	$a, b, c, d$ = sides $b_1$ = long base $b_2$ = short base $h$ = height	$P = a + b + c + d$	$A = \frac{1}{2}h(b_1 + b_2)$
Triangle	$a, b, c$ = sides $h$ = height	$P = a + b + c$	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$

## Geometric Solids: Volumes

Name	Notation	Volume (V)
Rectangular Prism	$l$ = length $w$ = width $h$ = height	$V = lwh$
Right Cylinder	$r$ = radius $h$ = height	$V = \pi r^2 h$

## Angle Formulas

Central Angle Formula:



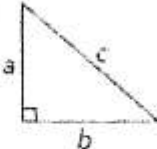
$$m\angle x = m\widehat{AB}$$

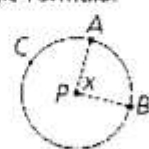
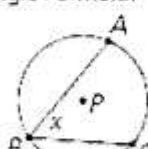
where  $P$  is the center of the circle.

Sum of the measures of the interior angles of a convex polygon with  $n$  sides:

$$S = (n - 2)(180^\circ)$$

# MATH REFERENCE SHEET

Coordinate Geometry and Linear Equation Forms	
Given: Points $S(x_1, y_1), T(x_2, y_2)$	
Midpoint between two points: Midpoint = $\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$	
Slope of line through two points: $m = \frac{y_2 - y_1}{x_2 - x_1}$	
Point-Slope Form: $y - y_1 = m(x - x_1)$	
Standard or General Form: $Ax + By = C$	
Slope-Intercept Form: $y = mx + b$	
Additional Formulas	
Distance, Rate, Time Formula: $d = \text{distance}, r = \text{rate}, t = \text{time}$ $d = rt$	Sum of the measures of the interior angles of a convex polygon with $n$ sides: $S = (n - 2)(180^\circ)$
Simple Interest Formulas: $I = \text{interest}, P = \text{principal},$ $r = \text{annual interest rate in decimal form}, t = \text{time in years}, A = \text{total amount after time } t$ $I = Prt$ $A = P(1 + rt)$	
Density = $\frac{\text{mass}}{\text{volume}}$	
Population density = $\frac{\text{number of people}}{\text{unit of area}}$	
Pythagorean Theorem:	
	$a^2 + b^2 = c^2$

Angle Formulas	
Central Angle Formula:  $m. x = m\widehat{AC}$ where $P$ is the center of the circle.	Inscribed Angle Formula:  $m. x = \frac{1}{2} m\widehat{AC}$ where $P$ is the center of the circle.