Geometry/Instructional Strategies/

FORMULA REFERENCE SHEET

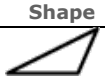
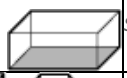
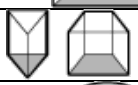
Shape	Formulas for Area *(A)* and Circumference *(C)*
Triangle 	$A = \frac{1}{2}bh = \frac{1}{2}$ x base x height
Rectangle 	$A = lw$ = length x width
Trapezoid 	$A = \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}$ x sum of bases x height
Parallelogram 	$A = bh$ = base x height
Circle 	$A = \pi r^2 = \pi \times$ square of radius $C = 2\pi r = 2 \times \pi$ x radius $C = \pi d = \pi \times$ diameter

Figure	Formulas for Volume *(V)* and Surface Area *(SA)*
Rectangular Prism 	$V = lwh$ = length x width x height $SA = 2lw + 2hw + 2lh$ = 2(length x width) + 2(height x width) + 2(length x height)
General Prisms 	$V = Bh$ = area of base x height SA = sum of the areas of the faces
Right Circular Cylinder 	$V = Bh$ = area of base x height $SA = 2B + Ch$ = (2 x area of base) + (circumference x height)
Square Pyramid 	$V = \frac{1}{3}Bh = \frac{1}{3} \times$ area of base $\times$ height $SA = B + \frac{1}{2}P\ell$ = area of base + ($\frac{1}{2} \times$ perimeter of base $\times$ slant height)
Right Circular Cone 	$V = \frac{1}{3}Bh = \frac{1}{3} \times$ area of base $\times$ height $SA = B + \frac{1}{2}C\ell$ = area of base + ($\frac{1}{2} \times$ circumference $\times$ slant height)
Sphere 	$V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times \pi \times$ cube of radius $SA = 4\pi r^2 = 4 \times \pi \times$ square of radius

Equations of a Line
Standard Form: $Ax + By = C$ where A and B are not both zero
Slope-Intercept Form: $y = mx + b$ or $y = b + mx$ where m = slope and b = y-intercept
Point-Slope Formula: $y - y_1 = m(x - x_1)$ where m = slope, (x_1, y_1) = point on line

Coordinate Geometry Formulas
Let (x_1,y_1) and (x_2,y_2) be two points in the plane. slope = $\frac{y_2 - y_1}{x_2 - x_1}$ where $x_2 \neq x_1$ midpoint = $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ distance = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Distance Traveled
$d = rt$ distance = rate x time

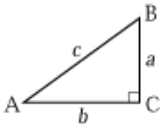
Simple Interest
$I = prt$ interest = principal x interest rate x time

Polygon Angle Formulas
Sum of degree measures of the interior angles of a polygon: 180 (n - 2) Degree measure of an interior angle of a regular polygon:

$$\frac{180(n-2)}{n}$$

where n is the number of sides of the polygon

Formulas for Right Triangles



Pythagorean Theorem:

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

$$\sin A = \frac{a}{c} = \left(\frac{\text{opposite}}{\text{hypotenuse}}\right)$$

$$\cos A = \frac{b}{c} = \left(\frac{\text{adjacent}}{\text{hypotenuse}}\right)$$

$$\tan A = \frac{a}{b} = \left(\frac{\text{opposite}}{\text{adjacent}}\right)$$

Special Triangles