



Math Formula Sheet

VOLUME

Volume of a Pyramid	$V = 1/3 \cdot l \cdot w \cdot h$
Volume of any Prism	$V = b \cdot h$ or $V = l \cdot w \cdot h$
Volume of a Cylinder	$V = \pi \cdot r^2 \cdot h$
Volume of a Cone	$V = 1/3 \cdot B \cdot h$
Volume of a Sphere	$V = 4/3 \cdot \pi \cdot r^3$
Volume of a Cube with side s	$V = s^3$ or $l \cdot w \cdot h$

SURFACE AREA

Surface Area of a Cube with sides s	$S.A. = 6 \cdot s^2$
Surface Area of a Sphere	$S.A. = 4 \cdot \pi \cdot r^2$
Surface Area of a Rectangular Prism	$S.A. = 2(l \cdot w + w \cdot h + l \cdot h)$
Surface Area of a Cylinder	$S.A. = 2 \cdot \pi \cdot r^2 + 2 \cdot \pi \cdot r \cdot h$

AREA OF POLYGONS

Area of a Parallelogram	$A = b \cdot h$
Area of a Rectangle	$A = b \cdot h$
Area of a Trapezoid	$A = 1/2 \cdot h \cdot (b_1 + b_2)$
Area of a Square	$A = s^2$
Area of a Triangle	$A = 1/2 \cdot b \cdot h$
Area of a Right Triangle	$A = 1/2(\text{leg}) \cdot (\text{leg})$
Area of an Equilateral Triangle with side s	$A = 1/4 \cdot s^2 \cdot \sqrt{3}$ or $1/2 \cdot s \cdot 1/2 \cdot s \cdot \sqrt{3}$

PYTHAGOREAN THEOREM

$$a^2 + b^2 = c^2 \quad \text{or} \quad (\text{leg})^2 + (\text{leg})^2 = (\text{hypotenuse})^2$$

COMMON RIGHT TRIANGLES

3-4-5, 5-12-13, 8-15-17, 7-24-25



CIRCLES

Area of a Circle	$= \pi \cdot r^2$
Circumference of a Circle	$= 2 \cdot \pi \cdot r$ or $\pi \cdot D$
Volume of a Cylinder	$= \pi \cdot r^2 \cdot h$
Surface Area of a Cylinder	$= 2 \cdot \pi \cdot r^2 + 2 \cdot \pi \cdot r \cdot h$
Length of an arc of a circle	$= t/360 (2 \cdot \pi \cdot r)$
Area of a sector of a circle	$= t/360 \cdot \pi \cdot r^2$

where t = the number of degrees in the central angle

TRIG RATIOS

Sine of angle	$= \sin$
Cosine of angle	$= \cos$
Tangent of angle	$= \tan$
Cosecant of angle	$= \frac{1}{\sin}$
Secant of angle	$= \frac{1}{\cos}$
Cotangent of angle	$= \frac{1}{\tan}$

SOHCAHTOA

$=$ opposite/hypotenuse
$=$ adjacent/hypotenuse
$=$ opposite/adjacent
$=$ hypotenuse/opposite
$=$ hypotenuse/adjacent
$=$ adjacent/opposite

OTHER IMPORTANT RELATIONSHIPS

$$\text{Distance} = (\text{Rate}) \cdot (\text{Time}) \quad D = R \cdot T \quad \text{Time} = \frac{\text{Distance}}{\text{Rate}} \quad T = D/R$$

$$\text{Rate} = \frac{\text{Distance}}{\text{Time}} \quad T = D/R$$

$$\text{Average} = \frac{\text{Total sum of the quantities}}{\text{Number of quantities}}$$

$$\text{Probability} = \frac{\text{number of desired outcomes}}{\text{number of total possible outcomes}}$$

$$\text{Percent} = \frac{\text{part}}{\text{whole}} \cdot 100$$

$$\text{Mid-Point Formula} = \left(\frac{X_1 + X_2}{2}, \frac{Y_1 + Y_2}{2} \right)$$

$$\text{Distance Formula} = \sqrt{(X_2 - X_1)^2 + (Y_2 - Y_1)^2}$$

Slope Formula

$$\frac{\text{Rise}}{\text{Run}} \quad \text{or} \quad \frac{Y_2 - Y_1}{X_2 - X_1}$$