

ISTEP + Mathematics Reference Sheet

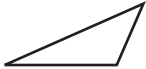




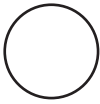


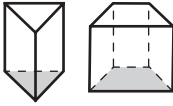



Figure	Formulas for Area (A) and Circumference (C)	
Triangle 	$A = \frac{1}{2}bh$	Area = $\frac{1}{2} \times$ base \times height
Rectangle 	$A = lw$	Area = length \times width
Trapezoid 	$A = \frac{1}{2}h(b_1 + b_2)$	Area = $\frac{1}{2} \times$ height \times sum of bases
Parallelogram 	$A = bh$	Area = base \times height
Square 	$A = s^2$	Area = side \times side
Circle 	$A = \pi r^2$ $C = 2\pi r$	Area = $\pi \times$ square of radius Circumference = $2 \times \pi \times$ radius $\pi \approx 3.14$ or $\frac{22}{7}$

Figure	Formulas for Volume (V) and Surface Area (SA)	
Rectangular Prism 	$V = lwh$ $SA = 2lw + 2hw + 2lh$	Volume = length \times width \times height Surface Area = $2(\text{length} \times \text{width}) + 2(\text{height} \times \text{width}) + 2(\text{length} \times \text{height})$
Cylinder 	$V = \pi r^2 h$ $SA = 2\pi r^2 + 2\pi rh$	Volume = $\pi \times$ square of radius \times height Surface Area = $2 \times \pi \times$ square of radius $+ 2 \times \pi \times$ radius \times height

Conversions

1 foot = 12 inches	1 minute = 60 seconds	1 meter = 1000 millimeters
1 yard = 3 feet	1 hour = 60 minutes	1 meter = 100 centimeters
1 mile = 5,280 feet	1 day = 24 hours	1 kilometer = 1000 meters
1 mile = 1,760 yards	1 cup = 8 fluid ounces	1 gram = 1000 milligrams
1 pound = 16 ounces	1 pint = 2 cups	1 kilogram = 1000 grams
1 ton = 2,000 pounds	1 quart = 2 pints	1 liter = 1000 cubic centimeters
	1 gallon = 4 quarts	1 liter = 1000 milliliters

Figure		Formulas for Volume (V) and Surface Area (SA)		
General Prisms		$V = Bh$	Volume = area of base \times height Surface Area = sum of the areas of the faces	$\pi \approx 3.14$ or $\pi \approx \frac{22}{7}$
Sphere		$V = \frac{4}{3}\pi r^3$ $SA = 4\pi r^2$	Volume = $\frac{4}{3} \times \pi \times$ cube of radius Surface Area = $4 \times \pi \times$ square of radius	
Right Circular Cone		$V = \frac{1}{3}\pi r^2 h$	Volume = $\frac{1}{3} \times \pi \times$ square of radius \times height	
Regular Pyramid		$V = \frac{1}{3}Bh$	Volume = $\frac{1}{3} \times$ area of base \times height	

Slope-Intercept Form

$$y = mx + b$$

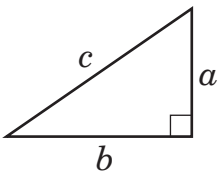
where m = slope and b = y -intercept

Simple Interest Formula

$$I = prt$$

where I = interest, p = principal, r = rate, and t = time in years

Pythagorean Theorem



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

Temperature Formulas

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

$$^{\circ}\text{Celsius} = \frac{5}{9} \times (^{\circ}\text{Fahrenheit} - 32)$$

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

$$^{\circ}\text{Fahrenheit} = \frac{9}{5} \times ^{\circ}\text{Celsius} + 32$$

Distance Formula

$$d = rt$$

where d = distance, r = rate, and t = time