

# Mathematics Reference Sheet

## Conversions

### U.S. Customary

1 foot = 12 inches  
1 yard = 3 feet  
1 mile = 5280 feet  
1 acre  $\approx$  43,560 square feet  
1 cup = 8 fluid ounces  
1 pint = 2 cups  
1 quart = 2 pints  
1 gallon = 4 quarts  
1 gallon = 231 cubic inches  
1 pound = 16 ounces  
1 ton = 2000 pounds  
1 cubic foot  $\approx$  7.5 gallons

### U.S. Customary to Metric

1 inch  $\approx$  2.54 centimeters  
1 foot  $\approx$  0.3 meter  
1 mile  $\approx$  1.6 kilometers  
1 quart  $\approx$  0.95 liter  
1 gallon  $\approx$  3.79 liters  
1 cup  $\approx$  237 milliliters  
1 pound  $\approx$  0.45 kilogram  
1 ounce  $\approx$  28.3 grams  
1 gallon  $\approx$  3785 cubic centimeters

### Time

1 minute = 60 seconds  
1 hour = 60 minutes  
1 hour = 3600 seconds  
1 year = 52 weeks

### Temperature

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

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

### Metric

1 centimeter = 10 millimeters  
1 meter = 100 centimeters  
1 kilometer = 1000 meters  
1 liter = 1000 milliliters  
1 kiloliter = 1000 liters  
1 milliliter = 1 cubic centimeter  
1 liter = 1000 cubic centimeters  
1 cubic millimeter = 0.001 milliliter  
1 gram = 1000 milligrams  
1 kilogram = 1000 grams

### Metric to U.S. Customary

1 centimeter  $\approx$  0.39 inch  
1 meter  $\approx$  3.28 feet  
1 kilometer  $\approx$  0.6 mile  
1 liter  $\approx$  1.06 quarts  
1 liter  $\approx$  0.26 gallon  
1 kilogram  $\approx$  2.2 pounds  
1 gram  $\approx$  0.035 ounce  
1 cubic meter  $\approx$  264 gallon

## Equations of Lines

Slope-intercept form

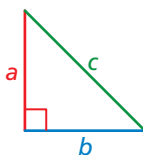
$$y = mx + b$$

Standard form

$$ax + by = c, a, b \neq 0$$

## Pythagorean Theorem

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



## Rules of Exponents

Product of Powers Property

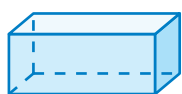
$$a^m \cdot a^n = a^{m+n}$$

Quotient of Powers Property

$$\frac{a^m}{a^n} = a^{m-n}, \text{ where } a \neq 0$$

## Surface Area and Volume

### Prism



$S$  = areas of bases + areas of lateral faces

$$V = Bh$$

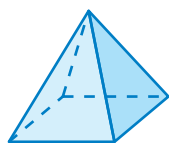
### Cylinder



$$S = 2\pi r^2 + 2\pi rh$$

$$V = Bh$$

### Pyramid



$S$  = area of base + areas of lateral faces

$$V = \frac{1}{3}Bh$$

### Cone



$$S = \pi r^2 + \pi r\ell$$

$$V = \frac{1}{3}Bh$$