

# 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

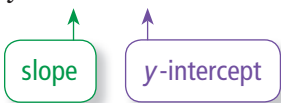
### Metric to U.S. Customary

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

$$y = mx + b$$

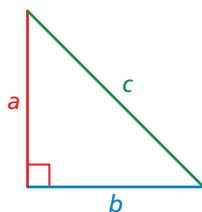


Standard form

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


## Pythagorean Theorem

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




## Volume

### Cylinder




$$V = Bh = \pi r^2 h$$

### Cone



$$V = \frac{1}{3}Bh = \frac{1}{3}\pi r^2 h$$

### Sphere



$$V = \frac{4}{3}\pi r^3$$

## Rules of Exponents

Product of Powers Property:  $a^m \cdot a^n = a^{m+n}$

Quotient of Powers Property:  $\frac{a^m}{a^n} = a^{m-n}$ , where  $a \neq 0$

Zero Exponents:  $a^0 = 1$ , where  $a \neq 0$

Negative Exponents:  $a^{-n} = \frac{1}{a^n}$ , where  $a \neq 0$