# Frequently Used Symbols and Formulas

## SYMBOLS

| | |
|---|---|
| $=$ | Is equal to |
| $\approx$ | Is approximately equal to |
| $>$ | Is greater than |
| $<$ | Is less than |
| $\geq$ | Is greater than or equal to |
| $\leq$ | Is less than or equal to |
| $\lvert x \rvert$ | The absolute value of $x$ |
| $\{x \mid x\ldots\}$ | The set of all $x$ such that $x\ldots$ |
| $-x$ | The opposite of $x$ |
| $\sqrt{x}$ | The square root of $x$ |
| $\sqrt[n]{x}$ | The $n$th root of $x$ |
| LCM | Least Common Multiple |
| LCD | Least Common Denominator |
| $\pi$ | Pi |
| $i$ | $\sqrt{-1}$ |
| $f(x)$ | $f$ of $x$, or $f$ at $x$ |

## FORMULAS

| | |
|---|---|
| $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ | Slope of a line |
| $y = mx + b$ | Slope–intercept form of a linear equation |
| $y - y_1 = m(x - x_1)$ | Point–slope form of a linear equation |
| $(A + B)(A - B) = A^2 - B^2$ | Product of the sum and difference of the same two terms |
| $(A + B)^2 = A^2 + 2AB + B^2,$<br>$(A - B)^2 = A^2 - 2AB + B^2$ | Square of a binomial |
| $d = rt$ | Formula for distance traveled |
| $\dfrac{1}{a} \cdot t + \dfrac{1}{b} \cdot t = 1$ | Work principle |
| $s = 16t^2$ | Free-fall distance |
| $y = kx$ | Direct variation |
| $y = \dfrac{k}{x}$ | Inverse variation |
| $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ | Quadratic formula |

## GEOMETRIC FORMULAS*

| | |
|---|---|
| $A = lw$ | Area of a rectangle |
| $P = 2l + 2w$ | Perimeter of a rectangle |
| $A = \frac{1}{2}bh$ | Area of a triangle |
| $a^2 + b^2 = c^2$ | Pythagorean theorem |
| $A = bh$ | Area of a parallelogram |
| $A = \pi r^2$ | Area of a circle |
| $C = 2\pi r$ | Circumference of a circle |
| $V = lwh$ | Volume of a rectangular solid |
| $V = \pi r^2 h$ | Volume of a right circular cylinder |
| $S = 2\pi rh + 2\pi r^2$ | Surface area of a right circular cylinder |

*These and other geometric formulas can be found in Table 3.