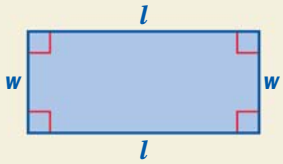
Table of Formulas

Geometric Formulas

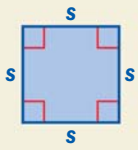
Rectangle (p. 69)



Area
$A = lw$

Perimeter
$P = 2l + 2w$

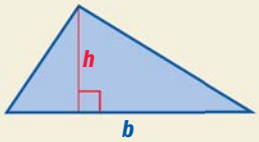
Square (p. 69)



Area
$A = s^2$

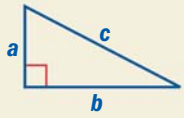
Perimeter
$P = 4s$

Triangle (p. 70)



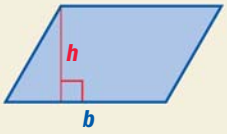
Area
$A = \frac{1}{2}bh$

Pythagorean Theorem (p. 465)



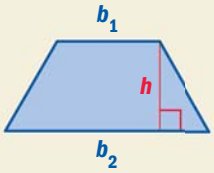
In a right triangle, $a^2 + b^2 = c^2$ where a and b are the lengths of the legs and c is the length of the hypotenuse.

Parallelogram (p. 521)



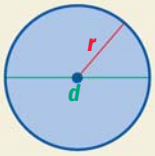
Area
$A = bh$

Trapezoid (p. 522)



Area
$A = \frac{1}{2}(b_1 + b_2)h$

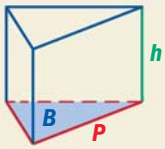
Circle (pp. 528, 529)



Circumference
$C = \pi d$ or
$C = 2\pi r$

Area
$A = \pi r^2$

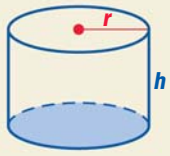
Prism (pp. 539, 552)



Surface Area
$S = 2B + Ph$

Volume
$V = Bh$

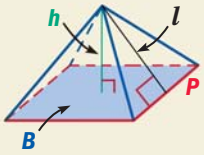
Cylinder (pp. 540, 553)



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

Volume
$V = \pi r^2 h$

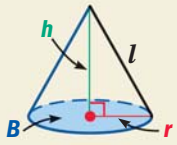
Pyramid (pp. 545, 558)



Surface Area
$S = B + \frac{1}{2}Pl$

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

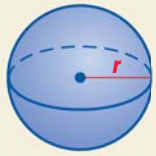
Cone (pp. 546, 558)



Surface Area
$S = \pi r^2 + \pi rl$

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

Sphere (pp. 548, 562)



Surface Area
$S = 4\pi r^2$

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

Other Formulas

Distance traveled (p. 77)	$d = rt$ where d is distance, r is rate, and t is time
Probability of an event (p. 306)	The probability of an event when all the outcomes are equally likely is: $P(\text{event}) = \frac{\text{Number of favorable outcomes}}{\text{Number of possible outcomes}}$
Experimental probability (p. 307)	The experimental probability of an event is: $P(\text{event}) = \frac{\text{Number of successes}}{\text{Number of trials}}$
Simple interest (p. 362)	$I = Prt$ where I is simple interest, P is the principal, r is the annual interest rate (written as a decimal), and t is the time in years
Compound interest (p. 364)	$A = P(1 + r)^t$ where A is the balance, P is the principal, r is the annual interest rate (written as a decimal), and t is the time in years
Distance formula (p. 476)	The distance d between two points (x_1, y_1) and (x_2, y_2) is given by $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.
Midpoint formula (p. 478)	The coordinates of the midpoint M of a segment with endpoints $A(x_1, y_1)$ and $B(x_2, y_2)$ are given by $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$.
Slope formula (p. 478)	If points $A(x_1, y_1)$ and $B(x_2, y_2)$ do not lie on a vertical line, then the slope of $\overleftrightarrow{AB}$ is $\frac{y_2 - y_1}{x_2 - x_1}$.
Permutations (p. 616)	The number of permutations of n objects taken r at a time can be written as ${}_nP_r$ where ${}_nP_r = \frac{n!}{(n - r)!}$.
Combinations (p. 621)	The number of combinations of n objects taken r at a time can be written as ${}_nC_r$ where ${}_nC_r = \frac{{}_nP_r}{r!}$.
Probability of disjoint or overlapping events (pp. 628, 629)	If A and B are disjoint events, then $P(\text{A or B}) = P(\text{A}) + P(\text{B})$. If A and B are overlapping events, then $P(\text{A or B}) = P(\text{A}) + P(\text{B}) - P(\text{A and B})$.
Probability of independent or dependent events (pp. 635, 636)	If A and B are independent events, then $P(\text{A and B}) = P(\text{A}) \cdot P(\text{B})$. If A and B are dependent events, then $P(\text{A and B}) = P(\text{A}) \cdot P(\text{B given A})$.