

## Mathematics Chart

|  |                    |   |
|--|--------------------|---|
| <b>Perimeter</b>   | rectangle          | $P = 2l + 2w$ or $P = 2(l + w)$                               |
| <b>Circumference</b>   | circle             | $C = 2\pi r$ or $C = \pi d$                                   |
| <b>Area</b>  | rectangle          | $A = lw$ or $A = bh$  |
|  | triangle           | $A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$                     |
|  | trapezoid          | $A = \frac{1}{2}(b_1 + b_2)h$ or $A = \frac{(b_1 + b_2)h}{2}$ |
|  | regular polygon    | $A = \frac{1}{2}aP$   |
|  | circle             | $A = \pi r^2$   |
| <i>P</i> represents the Perimeter of the Base of a three-dimensional figure. |                    |   |
| <i>B</i> represents the Area of the Base of a three-dimensional figure.      |                    |   |
| <b>Surface Area</b>  | cube (total)       | $S = 6s^2$  |
|  | prism (lateral)    | $S = Ph$  |
|  | prism (total)      | $S = Ph + 2B$   |
|  | pyramid (lateral)  | $S = \frac{1}{2}Pl$   |
|  | pyramid (total)    | $S = \frac{1}{2}Pl + B$                                       |
|  | cylinder (lateral) | $S = 2\pi rh$   |
|  | cylinder (total)   | $S = 2\pi rh + 2\pi r^2$ or $S = 2\pi r(h + r)$               |
|  | cone (lateral)     | $S = \pi rl$  |
|  | cone (total)       | $S = \pi rl + \pi r^2$ or $S = \pi r(l + r)$                  |
|  | sphere             | $S = 4\pi r^2$  |
| <b>Volume</b>  | prism or cylinder  | $V = Bh$  |
|  | pyramid or cone    | $V = \frac{1}{3}Bh$   |
|  | sphere             | $V = \frac{4}{3}\pi r^3$                                      |
| <b>Special Right Triangles</b>   | 30°, 60°, 90°      | $x, x\sqrt{3}, 2x$  |
|  | 45°, 45°, 90°      | $x, x, x\sqrt{2}$   |
| <b>Pythagorean Theorem</b>   |                    | $a^2 + b^2 = c^2$   |
| <b>Distance Formula</b>  |                    | $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$                    |
| <b>Slope of a Line</b>   |                    | $m = \frac{y_2 - y_1}{x_2 - x_1}$                             |
| <b>Midpoint Formula</b>  |                    | $M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$ |
| <b>Quadratic Formula</b>   |                    | $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$                      |
| <b>Slope-Intercept Form of an Equation</b>                                   |                    | $y = mx + b$  |
| <b>Point-Slope Form of an Equation</b>                                       |                    | $y - y_1 = m(x - x_1)$  |
| <b>Standard Form of an Equation</b>  |                    | $Ax + By = C$   |
| <b>Simple Interest Formula</b>   |                    | $I = prt$   |