

# ISTEP+ Mathematics Reference Sheet

## Grade 10

### Formulas

$$\text{Volume of Sphere} = \frac{4}{3}\pi r^3$$

$$\text{Surface Area of Sphere} = 4\pi r^2$$

$$\text{Volume of Right Circular Cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Volume of Regular Pyramid} = \frac{1}{3}Bh$$

$$\text{Pythagorean Theorem: } a^2 + b^2 = c^2$$

$$\text{Slope-Intercept Form: } y = mx + b$$

$$\text{Point-Slope Form: } y - y_1 = m(x - x_1)$$

$$\text{Standard Form of a Linear Equation: } Ax + By = C$$

$$\text{Slope of a Line: slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{Standard Form of a Quadratic Function: } f(x) = ax^2 + bx + c$$

$$\text{Quadratic Formula: } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

### Conversions

$$1 \text{ foot} = 12 \text{ inches}$$

$$1 \text{ yard} = 3 \text{ feet}$$

$$1 \text{ mile} = 5,280 \text{ feet}$$

$$1 \text{ mile} = 1,760 \text{ yards}$$

$$1 \text{ cup} = 8 \text{ fluid ounces}$$

$$1 \text{ pint} = 2 \text{ cups}$$

$$1 \text{ quart} = 2 \text{ pints}$$

$$1 \text{ gallon} = 4 \text{ quarts}$$

$$1 \text{ pound} = 16 \text{ ounces}$$

$$1 \text{ ton} = 2,000 \text{ pounds}$$

$$1 \text{ meter} = 1,000 \text{ millimeters}$$

$$1 \text{ meter} = 100 \text{ centimeters}$$

$$1 \text{ kilometer} = 1,000 \text{ meters}$$

$$1 \text{ gram} = 1,000 \text{ milligrams}$$

$$1 \text{ kilogram} = 1,000 \text{ grams}$$

$$1 \text{ liter} = 1,000 \text{ milliliters}$$

$$1 \text{ inch} = 2.54 \text{ centimeters}$$

$$1 \text{ mile} = 1.609 \text{ kilometers}$$

$$1 \text{ pound} = 0.454 \text{ kilogram}$$

$$1 \text{ gallon} = 3.785 \text{ liters}$$

$$1 \text{ meter} = 39.37 \text{ inches}$$

$$1 \text{ kilometer} = 0.62 \text{ mile}$$

$$1 \text{ kilogram} = 2.2 \text{ pounds}$$

$$1 \text{ liter} = 0.264 \text{ gallon}$$

