**Chapter 2 Formulas**

Simple Interest: \( I = Prt \), where \( I \), is the amount of interest earned or paid, the principal \( P \), is the amount of money that is invested or borrowed, the annual interest rate is \( r \), and \( t \) is the number of years

Pythagorean Theorem:

![Pythagorean Theorem Diagram](image)

\[ a^2 + b^2 = c^2 \]

**Chapter 3 Formulas**

Slope of a line containing the points \((x_1, y_1)\) and \((x_2, y_2)\): \[ m = \frac{y_2 - y_1}{x_2 - x_1} \]

Slope-Intercept form of a line: \( y = mx + b \)

Point-Slope form of a line: \( y - y_1 = m(x - x_1) \)

**Chapter 5 Formulas**

Product of the Sum and Difference of the same two terms: \( (a+b)(a-b) = a^2 - b^2 \)

Square of a Binomial: \( (a+b)^2 = a^2 + 2ab + b^2 \)
\[ (a-b)^2 = a^2 - 2ab + b^2 \]

**Chapter 10 Formulas**

Compound Interest: After \( t \) years, the balance, \( A \), in an account with principal \( P \) and annual interest rate \( r \) is given by

1. For \( n \) compounding periods per year: \( A = P \left(1 + \frac{r}{n}\right)^{nt} \)

2. For continuous compounding: \( A = Pe^{rt} \)

The pH of a substance: \( pH = -\log[H^+] \), where \([H^+]\) is the hydrogen ion concentration in moles per liter.