

I. Perimeter, Area and Volume formulas

Square: $P = 4s$
 $A = s^2$

Rectangle: $P = 2l + 2w$
 $A = lw$

Parallelogram: $A = bh$

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

Triangle: $A = \frac{1}{2}bh$

Circle: $C = 2\pi r$
 $A = \pi r^2$

Closed Box: $A = 2lw + 2lh + 2wh$
 $V = lwh$

Sphere: $A = 4\pi r^2$
 $V = \frac{4}{3}\pi r^3$

Cone: $V = \frac{1}{3}\pi r^2 h$

Cylinder: $A = 2\pi r^2 + 2\pi rh$
 $V = \pi r^2 h$

II. Exponential Growth and Decay

Growth: $P(t) = P_0 e^{kt}$

Decay: $P(t) = P_0 e^{-kt}$

III. Math of Finance

Simple interest: $i = prt$

Future value (simple interest): $A = P(1 + rt)$

Future value (compound interest): $A = P(1 + i)^n$, where $i = \frac{r}{m}$ and $n = mt$

Present value (compound interest): $P = A(1 + i)^{-n}$, where $i = \frac{r}{m}$ and $n = mt$

Future value (annuity): $S = R \left[\frac{(1 + i)^n - 1}{i} \right]$, where $i = \frac{r}{m}$ and $n = mt$

Present value (annuity): $P = R \left[\frac{1 - (1 + i)^{-n}}{i} \right]$, where $i = \frac{r}{m}$ and $n = mt$

Monthly payment (loan): $R = \frac{Pi}{1 - (1 + i)^{-n}}$, where $i = \frac{r}{m}$ and $n = mt$

Effective rate: $r_{eff} = \left(1 + \frac{r}{m} \right)^m - 1$

Tax-free yield: $T_f = T_a(1 - F)$

IV. Miscellaneous

Fahrenheit to Celsius: $C = \frac{5}{9}(F - 32)$

Celsius to Fahrenheit: $F = \frac{9}{5}C + 32$

Pythagorean Theorem: $a^2 + b^2 = c^2$