

Foundations of Mathematics 12 Formula Sheet

Finance:

$$FV = P(1 + i)^n \qquad I = Prt \qquad \text{Rate of Return} = \frac{\text{Total Interest}}{\text{Total Invested}} \times 100\%$$

$$\text{Total Cost} = \text{Total Payments} + \text{Down Payment}$$

$$\text{Profit} = \text{Selling Price} - \text{Amount Still Owing}$$

$$\text{Actual Cost} = \text{Total Cost} - \text{Profit}$$

Set Notation:

Symbol	Meaning
\cup	Union
\cap	Intersection
A'	Not A
$\{ \}$	Empty Set
\emptyset	Empty Set

Principal of Inclusion & Exclusion:

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(A \cap C) - n(B \cap C) + n(A \cap B \cap C)$$

Probability:

$$P(A) = \frac{\text{Total Number of Favourable Outcomes}}{\text{Total Number of Outcomes in Sample Space}} \qquad P(\bar{A}) = 1 - P(A)$$

$$P(A \cap B) = P(A) \times P(B) \qquad P(A \cap B) = P(A) \times P(B | A)$$

$$P(A \cup B) = P(A) + P(B) \qquad P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

Combinatorics:

$${}_n P_r = \frac{n!}{(n-r)!} \qquad {}_n C_r = \frac{n!}{r!(n-r)!}$$

Sinusoidal Regression:

$$y = a \sin(b(x - c)) + d \qquad \text{Period} = \frac{2\pi}{b} \text{ or } \frac{360^\circ}{b}$$