

## MATH 1310 – FORMULAS & TABLES

### Set Theory

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

### Logic

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p	~p
T	F
F	T

p	q	p ∧ q
T	T	T
T	F	F
F	T	F
F	F	F

p	q	p ∨ q
T	T	T
T	F	T
F	T	T
F	F	F

p	q	p → q
T	T	T
T	F	F
F	T	T
F	F	T

### Functions

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$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$f(x) = y = mx + b$$

$$Ax + By = C$$

$$f(x) = mx + b$$

$$f(x) = ax^2 + bx + c$$

$$x = \frac{-b}{2a}$$

$$f(x) = b^x$$

$$f(x) = \log_b x$$

### Personal Finance

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$$I = Prt$$

$$A = P(1 + rt)$$

$$P = \frac{A}{(1 + rt)}$$

$$A = P \left(1 + \frac{r}{n}\right)^{nt}$$

$$P = \frac{A}{\left(1 + \frac{r}{n}\right)^{nt}}$$

$$A = Pe^{rt}$$

$$Y = \left(1 + \frac{r}{n}\right)^n - 1$$

$$A = \frac{P \left[ \left(1 + \frac{r}{n}\right)^{nt} - 1 \right]}{\left(\frac{r}{n}\right)}$$

$$P = \frac{A \left(\frac{r}{n}\right)}{\left[ \left(1 + \frac{r}{n}\right)^{nt} - 1 \right]}$$

### Counting & Probability

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$$n! = n(n-1)(n-2) \cdots (3)(2)(1)$$

$${}_n P_r = \frac{n!}{(n-r)!} \text{ or } \frac{n!}{p!q!r! \dots}$$

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

$$P(E) = \frac{n(E)}{n(S)}$$

### Statistics

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$$\bar{x} = \frac{\sum x}{n} \text{ or } \frac{\sum xf}{n}$$

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$