

Math 1310 Tables, Rules and Formulas

Fall 2015

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

$$y = mx + b$$

$$R(x) = (\text{price per unit sold})x$$

$$C(x) = \text{fixed cost} + (\text{cost per unit produced})x$$

$$P(x) = R(x) - C(x)$$

$$I = Prt$$

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

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

$$A = Pe^{rt}$$

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

$$A = \frac{P[(1+r)^t - 1]}{r}$$

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

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

$$\begin{aligned} n! &= n(n-1)(n-2)\dots 1 \cdot 2 \cdot 3 \\ &= 1 \cdot 2 \cdot 3 \cdot \dots \cdot n(n-1)(n-2) \end{aligned}$$

$$0! = 1$$

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

Permutation of duplicate

$$\text{items} = \frac{n!}{p!q!r!\dots}$$

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

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

$$0 \leq P(E) \leq 1$$

$$P(E) + P(E') = 1$$

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

$$\text{Odds in favor of } E = \frac{P(E)}{P(E')}$$

$$\text{Odds against } E = \frac{P(E')}{P(E)}$$

$$P(E) = \frac{a}{a+b}, \text{ odds in favor are } a \text{ to } b$$

$$\text{mean} = \bar{x} = \frac{\sum x}{n}$$

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

median is the value in the $\frac{n+1}{2}$ position

Range = highest data value - lowest data value

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