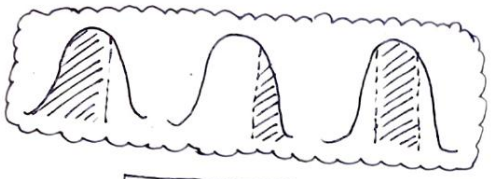
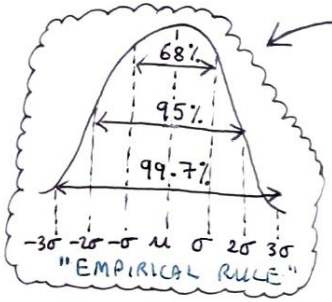


PROBABILITY

NORMAL DISTRIBUTIONS

*Pg 34 $z = \frac{x - \mu}{\sigma}$

z-Score Probabilities *Pg 36/37



ARRANGEMENTS/ PERMUTATIONS

$n!$

COMBINATIONS/ SELECTIONS

$\binom{n}{r}$

MUTUALLY EXCLUSIVE "NO OVERLAP

YES $P(A \cup B) = P(A) + P(B)$

NO $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

EXPECTED VALUE

$E(x) < 0$: BAD
$E(x) = 0$: FAIR
$E(x) > 0$: GOOD

BERNOULLI TRIALS

- fixed no. of trials
- Prob of success same every time
- independent trials

$\binom{n}{r}(p)^r(q)^{n-r}$ *Pg 33

INDEPENDENT EVENTS "Outcome of one doesn't affect the other"

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

CONDITIONAL PROBABILITY "Given that"

$P(A|B) = \frac{P(A \cap B)}{P(B)}$