

Precalc BE - Tuesday 2-16-10

- Take the vocabulary test
on Pg. 881 (skip # 9).
↓
END of Ch. 13
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PRECALC - Homework review. Pg 878-879 #11, 12, 17-20

⑪ $S = \text{good soufflés} \Rightarrow \frac{4}{5}$

$B = \text{bad (collapsed soufflés)} \Rightarrow \frac{1}{5}$

6 soufflés $\Rightarrow N = 6$ $P(\text{EXACTLY 4 good}) = ?$

$$(S+B)^6 = \sum_{r=0}^N \frac{N!}{r!(N-r)!} S^{N-r} B^r$$

4 good $\Rightarrow S^4 \Rightarrow B^2 \Rightarrow S^6, S^5, S^4$
 $\uparrow \quad \uparrow \quad \uparrow$
 $r=0 \quad r=1 \quad r=2$

$$\begin{aligned} r=2 \quad \therefore \frac{6!}{2!4!} S^4 B^2 &= 15 S^4 B^2 \\ &= 15 \left(\frac{4}{5}\right)^4 \left(\frac{1}{5}\right)^2 \\ &= \frac{15 \cdot 256}{625} \cdot \frac{1}{25} \end{aligned}$$

$$= \frac{768}{3125} = 24.6\% \text{ that } 4 \text{ are good}$$

⑫ $M = \text{make money} \Rightarrow \frac{5}{8}$

$L = \text{lose money} = \frac{3}{8}$

13 stocks, $P(\text{exactly 10 make money}) = ?$

$$(M+L)^N = \sum_{r=0}^N \frac{N!}{r!(N-r)!} M^{N-r} L^r$$

$M^{10} \Rightarrow M^{13}, M^{12}, M^{11}, M^{10}$
 $\Gamma=0 \qquad \qquad \qquad \Gamma=3$

$\Gamma=3 \Rightarrow \frac{13!}{3!(10)!} M^{10} L^3$

$$\frac{13 \cdot 12 \cdot 11}{3 \cdot 2 \cdot 1} M^{10} L^3 = 286 M^{10} L^3$$

$$= 286 \left(\frac{5}{8}\right)^{10} \left(\frac{3}{8}\right)^3$$

$$= 286 (.625)^{10} (.375)^3$$

$$= 286 (.009095) (.05273)$$

$$= .1372 = \boxed{13.72\% \text{ that 10 stocks will make money}}$$

17 → 20 10 questions on T/F test

① P(7 correct) $\begin{matrix} \nearrow R = \text{RIGHT} = \frac{1}{2} \\ \searrow W = \text{WRONG} = \frac{1}{2} \end{matrix}$

$$(R+W)^{10} = \sum_{r=0}^N \frac{N!}{r!(N-r)!} R^{N-r} W^r$$

7 correct $\Rightarrow R^7 \Rightarrow R^{10}, R^9, R^8, R^7$
 $r=0$ $r=3$

$$\therefore \frac{10!}{3!7!} R^7 W^3 = \frac{10 \cdot 9 \cdot 8}{3 \cdot 2} R^7 W^3$$

$$= 120 \left(\frac{1}{2}\right)^7 \left(\frac{1}{2}\right)^3$$

$$= 120 \cdot \frac{1}{128} \cdot \frac{1}{8}$$

$$= \boxed{\frac{15}{128}}$$

① $\boxed{\frac{193}{512}}$

② $\boxed{\frac{1}{1024}}$

③ $\boxed{\frac{319}{512}}$

• Classwork/homework Pg 879 # 24-26

• Assume 20 questions on 4 choice test,
Find P(60% or Above) $\Rightarrow$ Group work?
P(12), (13), (14), ...