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AP STAT FORMULAS ( I ) Descriptive Statistics

 $\overbar{x}= \frac{\sum\_{}^{}x\_{i}}{n}$ 7 elements: Hand or Calc?

 $s\_{x}= \sqrt{\frac{1}{n - 1} \sum\_{}^{}\left(x\_{i}- \overbar{x}\right)^{2}}$ 10 elements: Hand or Calc?

 $s\_{p}= \sqrt{\frac{\left(n\_{1}- 1\right)s\_{1}^{2}+ \left(n\_{2}- 1\right)s\_{2}^{2}}{\left(n\_{1}- 1\right)+ \left(n\_{2}- 1\right)}}$

 $\hat{y}= b\_{0}+ b\_{1}x$ 6 elements: Hand or Calc?

 $b\_{1}= \frac{\sum\_{}^{}\left(x\_{1}- \overbar{x}\right)\left(y\_{1}- \overbar{y}\right)}{\sum\_{}^{}\left(x\_{1}- \overbar{x}\right)^{2}}$

 $b\_{0}= \overbar{y}- b\_{1}\overbar{x}$ 6 elements: Hand or Calc?

 $r= \frac{1}{n-1} \sum\_{}^{}\left(\frac{x\_{i}- \overbar{x}}{s\_{x}}\right)\left(\frac{y\_{i}- \overbar{y}}{s\_{y}}\right)$

 $b\_{1}=r \frac{s\_{y}}{s\_{x}}$ 5 elements: Hand or Calc?

 $s\_{b\_{1}}= \frac{\sqrt{\frac{\sum\_{}^{}\left(y\_{i}- \hat{y}\_{i}\right)^{2}}{n-2}}}{\sqrt{\sum\_{}^{}\left(x\_{i}- \overbar{x}\right)^{2}}}$

( II ) Probability

 $P \left(A ∪B\right)=P \left(A\right)+ P \left(B\right)- P \left(A ∩B\right)$

8 Elements: Hand or Calc?

 $P\left(A|B\right)= \frac{P\left(A ∩ B\right)}{P\left(B\right)}$ 7 Elements: Hand or Calc?

 $E\left(X\right)= μ\_{x}= \sum\_{}^{}x\_{i}p\_{i}$ 8 Elements: Hand or Calc?

 Var$ = σ\_{x}^{2}= \sum\_{}^{}\left(x\_{i}- μ\_{x}\right)^{2} p\_{i}$ 12 Elements: Hand or Calc?

**If X has a binomial distribution with parameters *n* and *p*, then:**

*P* ( *X* = *k* ) = $\left(\begin{matrix}n\\k\end{matrix}\right)p^{k}\left(1-p\right)^{n-k}$ 11 elements: Hand or Calc?

 $μ\_{x}=np$ 5 elements: Hand or Calc?

 $σ\_{x}= \sqrt{np\left(1-p\right)}$ 8 elements: Hand or Calc?

 $μ\_{\hat{p}}=p$ 5 elements: Hand or Calc?

 $σ\_{\hat{p}}= \sqrt{\frac{p\left(1-p\right)}{n}}$ 10 elements: Hand or Calc?

**If** $\overbar{x}$ **is the mean of a random sample of size *n* from an infinite**

**population with mean µ and standard deviation σ, then:**

 $μ\_{\overbar{x}}= μ$ 4 elements: Hand or Calc?

 $σ\_{\overbar{x}}= \frac{σ}{\sqrt{n}}$ 7 elements: Hand or Calc?

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