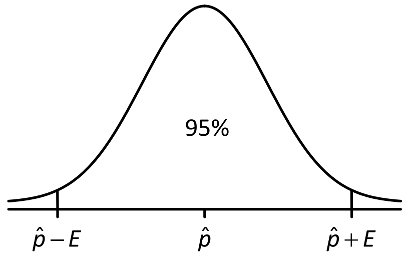
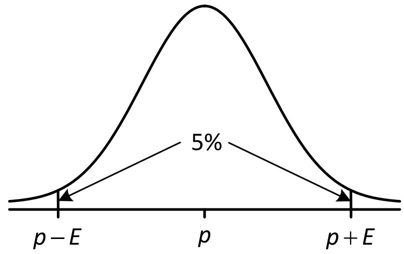
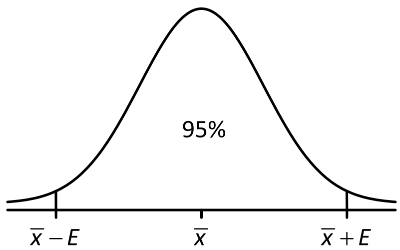
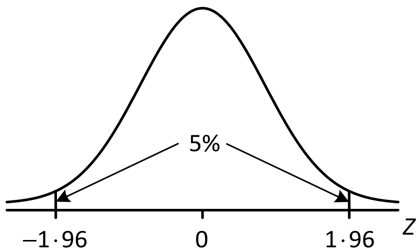
INFERENTIAL STATISTICS SUMMARY

	Confidence Interval (95%)	**Hypothesis Testing (5%)**
Proportion: **(data is yes/no)**	**[1]** Population: proportion $= p$ Sample: size $= n$, proportion $= \hat{p}$ Margin of Error (E): $E = \frac{1}{\sqrt{n}}$ or $E = 1 \cdot 96\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$  95% confidence interval for p is $\hat{p}-E \le p \le \hat{p}+E$ * Use $E = \frac{1}{\sqrt{n}}$ only if told or to find sample size, unknown p and $\hat{p}$.	**[3] Claim:** pop proportion = claim (p) H_0: $p =$ claim (p) H_1: $p \neq$ claim (p) Sample: size $= n$, proportion $= \hat{p}$ Margin of Error (E): $E = \frac{1}{\sqrt{n}}$ or $E = 1 \cdot 96\sqrt{\frac{p(1-p)}{n}}$  (i) If $p-E \le \hat{p} \le p+E$, **not significant**: do not reject H_0. (ii) If $\hat{p} < p-E$ or $\hat{p} > p+E$, **significant**: reject H_0, accept H_1
Mean: **(data is numbers)**	**[2]** Population: mean $= \mu$ Sample: size $= n$, mean $= \bar{x}$ Standard deviation: σ or s Margin of Error (E): $E = 1 \cdot 96 \frac{\sigma}{\sqrt{n}}$ or $E = 1 \cdot 96 \frac{s}{\sqrt{n}}$  95% confidence interval for μ is $\bar{x}-E \le \mu \le \bar{x}+E$ * $n \ge 30$ unless the population is normal	**[4] Claim:** pop. mean = claim (μ) H_0: $\mu =$ claim (μ) H_1: $\mu \neq$ claim (μ) Sample: size $= n$, mean $= \bar{x}$ Standard deviation: σ or s Test statistic: $z = \frac{\bar{x}-\mu}{\frac{\sigma}{\sqrt{n}}}$ or $z = \frac{\bar{x}-\mu}{\frac{s}{\sqrt{n}}}$  (i) If $-1 \cdot 96 \le z \le 1 \cdot 96$, **not significant**: do not reject H_0. (ii) If $z < -1 \cdot 96$ or $z > 1 \cdot 96$, **significant**: reject H_0, accept H_1. * p value $= 2\left(1 - P(Z \le \lvert z \rvert)\right)$

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