

## 2<sup>nd</sup> Semester Quiz 2 Notes

1) A survey of 120 people has a mean of 40 and a standard deviation of 5. Determine a 95% confidence interval for the population mean.

$$E = 1.96 \frac{5}{\sqrt{120}} = 0.9$$

$$CI = 40 \pm 0.9$$

$$39.1 \text{ to } 40.9$$

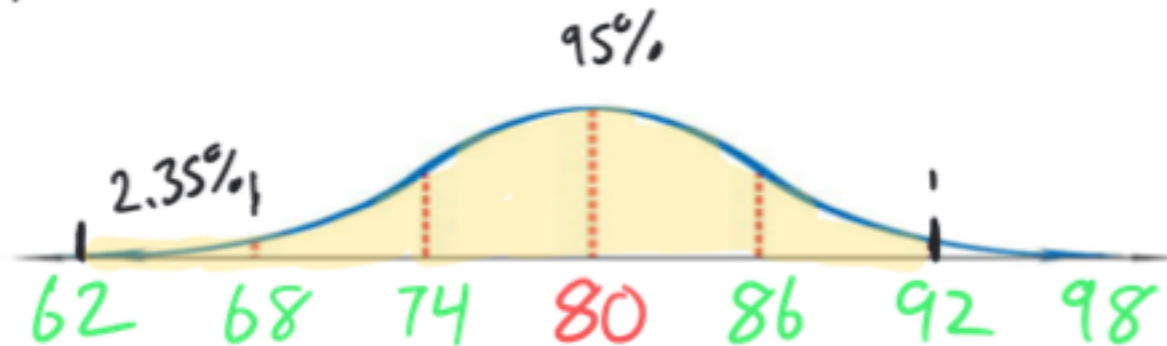
2) What type of study is the following?

You want to know if students enjoyed the rally, so you ask every 10<sup>th</sup> person who came out if they liked it or not.

Survey

3) A sample is normally distributed. If the mean is 80 and the standard deviation is 6, then what percent of the data is between 62 and 92? Label and shade the graph.

$$95 + 2.35 = 97.35\%$$



4) The average number correct on a quiz is 57 with a standard deviation of 5. Jon received a score of 60 and Sam received a score of 55. Assuming the grades form a normal distribution, who got a more common score and what was that person's z-score?

Jon

$$z = \frac{60 - 57}{5} = \frac{3}{5}$$

$$z = 0.6$$

Sam

$$z = \frac{55 - 57}{5} = -\frac{2}{5}$$

$$z = -0.4$$

Sam  $z = -0.4$

$$z = \frac{x - \mu}{\sigma}$$

$$E = z \cdot \frac{s}{\sqrt{n}}$$

$$E = z \cdot \sqrt{\frac{p(1-p)}{n}}$$

If 90% then  $z = 1.645$   
 If 95% then  $z = 1.960$   
 If 99% then  $z = 2.576$