4/15/19

1 STUDENT $\sigma = 100$

$\mu_{\bar{x}} =$ $\quad STD[\bar{x}] = \frac{\sigma}{\sqrt{4}} = 50$

FOR SAMPLE $\mu = 500$

$\sigma = 50$

$400 \to 600 \qquad \mu - 2\sigma \to \mu + 2\sigma$

$P[400 \le \bar{x} \le 600] = \Phi(-2) - \Phi(2)$

$= CDF(2) - CDF(-2)$

SUPPOSE WE DON'T KNOW MEAN SAT SCORE. BUT KNOW ~~$\sigma = 500$~~ $\sigma = 100$.

WE OBSERVE 1 STUDENT. HIS SCORE IS 400.

IF POP MEAN IS 500, WHAT'S PROB THAT STUDENT'S SCORE WAS AT LEAST 100 AWAY. 4/3

NOW TO LARGER SAMPLE

$N = 4$. MEAN OF 4 SCORES = 400.

IF POP $\mu = 500$. WHAT'S PROB MEAN WAS ≤ 400 OR ≥ 600?

NOW OBSERVE 9 STUDENTS . . .