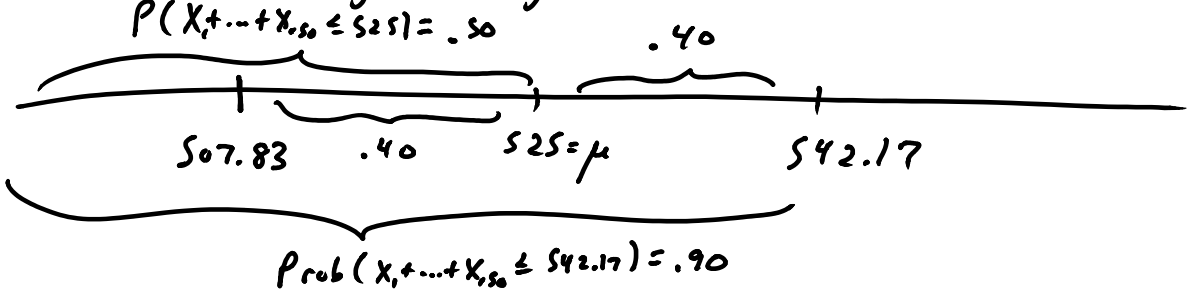
Example continued $X_1, \ldots, X_{150}$ independent Normal random variables, each with mean 3.5 and variance 1.2.

Showed $P(X_1 + \ldots + X_{150} \leq 542.17) = .90$.

Now find an interval, centered at the mean $= 150(3.5) = 525$, so that $X_1 + \ldots + X_{150}$ is in the interval with probability .80.

We have essentially already done the necessary work.



$525 - (542.17 - 525) = 507.83$

Desired interval is $[507.83, 542.17]$.