STA261 L5101: Quiz 1 - Solutions

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1.

$$P(\bar{X}_n < 0) = P\left(\frac{\bar{X} - 0}{\sigma/\sqrt{n}} < 0\right) \approx P(Z < 0) = 0.5$$

where $Z \sim N(0,1)$. Don't take off marks if students leave their answer as $P(Z < 0)$. Take off 2 marks if students don't mention the Central Limit Theorem/CLT.

2. $E(X) = b/2$ so replace $E(X)$ with $\bar{X}$ and solve for b to get $\hat{b} = 2\bar{X}$ like we saw in lecture.