zheming sun
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CS350 hw3

problem 4

n=40
sd error = 0.4

a. standard deviation:
z-score: -2.05, +2.05 (according to the z table)

formula: 2.05 * sd = 0.4
sd = 0.4/2.05
sd = sigma/ sqrt(N) = 0.4/2.05
sigma = 0.4 / 2.05 * sqrt(40)

---
lsigma = 1.234l
---

b. for 99% confidence interval
z score: -2.57, +2.57
sd = 0.4/2.05
standard error = z*sd = 2.57 * 0.4 / 2.05
= 0.501

confidence interval:
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l (3-0.5, 3+0.5) l
---

c. sd error = z*sd = 0.1
sd = 0.1/z = 0.1/2.05
sd = sigma / sqrt(N) = 1.234/sqrt(N) = 0.1/2.05
sqrt(N) = 1.234*2.05/0.1 = 25.297
N = 640

we have 40 right now, so we need 600 more

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l we need 600 more samplesl
