Quiz 6 (Group) for Statistics 113
Statistics and Society - Spring 1999
Material Covered: Chapters 21,22 of notes
For: 16th April

Name 1 (please print): _____ .
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Name 2 (please print): _____ .
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Name 3 (please print): _____ .
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Name 4 (please print): _____ .
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In a particular town, with 25,000 households, using a simple random sample of 500 households, 498 had refrigerators.

(a) [2] Match the items in Column II with the statistical terms in Column I.

Column I	Column II
(a) population	**(a)** all households
(b) sample	**(b)** percentage of all households with refrigerators
(c) statistic	**(c)** refrigerator or not of 500 households
(d) parameter	**(d)** percentage of 500 households with refrigerators
	(e) 500 households
	(f) refrigerator or not of 25,000 households

Column I	(a)	(b)	(c)	(d)
Column II				

(b) [1] The percentage of households in the town with refrigerators

is estimated to be _____ .

(c) [2] The SE of the percentage is _____ .

(d) [1] If possible, find a 95% CI for the percentage of all 25,000 households with refrigerators. If not possible, explain why not.

(a) [2] Match the items in Column II with the statistical terms in Column I.

Column I	(a)	(b)	(c)	(d)
Column II	(f)	(c)	(d)	(b)

(b) [1] The percentage of households in the town with refrigerators is estimated to be $\frac{498}{500} = 0.996$

(c) [2] The SE of the percentage is

since *sample* box model is 498 1s, 2 0s, sample SD $= \sqrt{\frac{498}{500} \times \frac{2}{500}} \approx 0.063$

and so SE of sum is $\sqrt{500}0.063 \approx 1.411$

and so SE of percentage is $\frac{1.411}{500} \approx 0.00282$

(d) [1] If possible, find a 95% CI for the percentage of all 25,000 households with refrigerators. If not possible, explain why not. **Not able to determine 95% CI because (sample) box model is too lopsided–distribution of percentage, based on sample of size 500, not normal enough.**