

Quiz 5 (Individual) for Statistics 113
Statistics and Society–Fall 2000
Material Covered: Chapters 19,20 of Workbook and text
For: Wednesday, 1st November

Name (please print): _____
last first

Try the following questions.

- (a) [1] A survey is carried out at PU/NC to estimate the percentage of undergraduates commuting within a ten mile radius of the campus. Match statistical terms with PU/NC example.

terms	PU/NC example
(i) population	(i) inside or outside 10 mile radius, surveyed students
(ii) sample	(ii) inside or outside 10 mile radius, all students
(iii) statistic	(iii) percentage inside 10 mile radius, all students
(iv) parameter	(iv) percentage inside 10 mile radius, surveyed students

terms	(i)	(ii)	(iii)	(iv)
PU/NC example				

- (b) [1] If we guessed that the percentage of students who had to commute within 10 miles was 85%, but found, instead, that a SRS of size 100 students gave 72%, we would tend to reject the (circle one) **statistic / parameter**.
- (c) [1] Purdue University North Central has 2,500 students, of whom 1,000 are older than 25. The registrar draws a SRS of 400 students. The SE for the percentage of students in the sample who are older than 25 is
(circle closest one) **0.017 / 0.024 / 0.041 / 0.067 / 0.083**.
- (d) [2] Purdue University North Central has 2,500 students, of whom 1,000 are older than 25. The registrar draws a SRS of 400 students. The chance that there are between 36% and 41% of students in the sample who are older than 25 is
(circle closest one) **50% / 55% / 60% / 65% / 70%**.

(a) [1] A survey

terms	(i)	(ii)	(iii)	(iv)
PU/NC example	(ii)	(i)	(iv)	(iii)

(b) [1] **parameter**

(c) [1] **0.024**. ($\sqrt{\frac{1000}{2500} \frac{1500}{2500}} \approx 0.4899$, $\sqrt{400} \times 0.4899 \approx 9.798$, $\frac{9.798}{400} \approx 0.02449$)

(d) [2] **60%**. ($\frac{0.36-0.4}{0.02449} \approx -1.633$, and $\frac{0.41-0.4}{0.02499} \approx 0.408$, and so using tables, $\frac{90.11}{2} + \frac{31.08}{2} \approx 60.59\%$)