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JOHNS HOPKINS
BLOOMBERG
SCHOOL *of* PUBLIC HEALTH

Lecture 3f: Practice Problems

John McGready
Johns Hopkins University

Estimating a 95% Confidence Interval

1. Suppose you are interested in estimating the proportion of employed Baltimore residents who use public transportation to get to their workplace on a regular basis. You a priori hypothesize this proportion to be roughly 20%. Suppose this is the (unknown) truth, and you do a study to estimate this proportion. How precise (within what boundaries) will you be able to estimate a 95% confidence interval for this proportion if you take a single random sample based on each of the following sizes?
 - a) $n = 120$
 - b) $n = 600$
 - c) $n = 1,200$

Estimating a 95% Confidence Interval

2. Suppose your hypothesized estimate of the proportion of residents taking public transportation to work was changed to 50%. How precise (within what boundaries) will you be able to estimate a 95% confidence interval for this proportion if you take a single random sample based on each of the following sizes?
 - a) $n = 120$
 - b) $n = 600$
 - c) $n = 1,200$