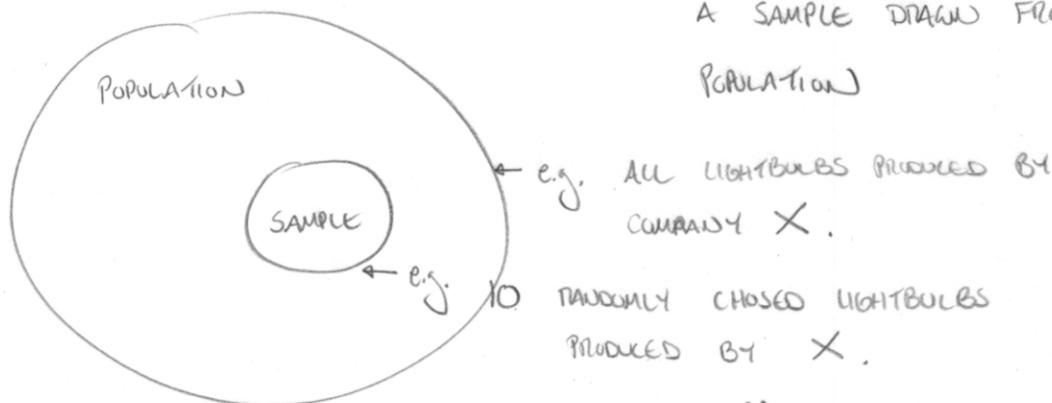


INTRODUCTION

Def: STATISTICS IS THE STUDY OF ANALYZING DATA, i.e. COLLECTED MEASUREMENTS.

Def: DESCRIPTIVE STATISTICS CONSISTS OF PROCEDURES USED TO SUMMARIZE & DESCRIBE THE IMPORTANT CHARACTERISTICS OF A SET OF MEASUREMENTS

Def: INFERENTIAL STATISTICS CONSISTS OF PROCEDURES USED TO MAKE INFERENCES (CONCLUSIONS BASED ON EVIDENCE) ABOUT POPULATION CHARACTERISTICS FROM INFORMATION CONTAINED IN A SAMPLE DRAWN FROM THE POPULATION



"How long do Company X's lightbulbs last?"

DESCR. STATS : WHAT DO WE KNOW ABOUT THESE 10 LIGHTBULBS?

INF. STATS : WHAT DO WE KNOW ABOUT ALL LIGHTBULBS?

THE NECESSARY STEPS OF INFERENCEAL STATISTICS

1. SPECIFY THE QUESTIONS TO BE ANSWERED & IDENTIFY THE POPULATION OF INTEREST.

- BE SPECIFIC!

- SAMPLE SHOULD BE REPRESENTATIVE OF THIS POPULATION

2. DECIDE HOW TO SELECT THE SAMPLE

(i.e. DESIGN OF THE EXPERIMENT, SAMPLING PROCEDURE)

3. SELECT SAMPLE & ANALYZE SAMPLE INFORMATION

MANY METHODS

4. USE INFO FROM STEP 3 TO MAKE INFERENCE ABOUT POPULATION

MANY METHODS

5. DETERMINE THE RELIABILITY OF THE INFERENCE.

e.g. IS THE POLL'S PREDICTIONS ACCURATE TO $\pm 1\%$, $\pm 5\%$, $\pm 10\%$?

HOW MUCH CONFIDENCE DO YOU HAVE IN YOUR INFERENCE?

(WE WILL SEE WAYS OF MEASURING THIS.)