

Key for HW 4.1 Part B # 17, 19, 23, 25

- 17
- A TO OBTAIN A RANDOM SAMPLE, THE PHONES MUST BE NUMBERED IN SOME WAY, KEEPING TRACK OF THE ORDER OF 1000 PHONES MAY BE DIFFICULT
  - B IT IS POSSIBLE THAT THE QUALITY OF THE PHONES PRODUCED CHANGE OVER THE COURSE OF THE DAY SO THAT THE LAST PHONES MANUFACTURED ARE NOT REPRESENTATIVE OF THE DAY'S PRODUCTION
  - C EACH SAMPLE OF 20 PHONES DOES NOT HAVE THE SAME PROBABILITY OF BEING SELECTED. IN FACT, THE 20 PHONES THAT ARE SAMPLED BE THE 50<sup>TH</sup>, 100<sup>TH</sup>, ... 1000<sup>TH</sup>; THE OTHERS HAVE NO CHANCE OF BEING SAMPLED.

19 FOR THE STUDENTS (IN ABC ORDER) ASSIGN THEM 01-30, DISREGARD 00, 31-99 and Repeats START AT LINE 123

123: 54 58 (08) (15) (07) (27) The students are  
08 - Ghash  
15 - Jones  
07 - Fisher  
27 - Show

There are ten faculty members,  
number them 0-9 in order  
to use a one digit number

123: Continue with the same line  
↳ 1 0

The teachers are 0 - Andrews  
1 - Besicovitch

23 This is not an SRS because some samples of size 250 have no chance of being selected. For example, it would be impossible to have samples of 250 males or 250 females.

25) a) This is cluster sampling

b) Label each block from 01 - 65. Using table D, beginning at line 142, record two-digit numbers, ignoring repeats, 00, and 66-99. The 5 identified blocks from the table are 02, 32, 26, 42, and 08. Using a calculator, type  $\text{Rand}(1,65)$  and generate 5 unique numbers, ignoring repeats. Answers will vary for the 5 numbers generated.