Math 21 Sampling Activity

Using Systematic Sampling (By Hand)

Based on your experience, what percent of COS students do you believe are female? _____

Based on your experience, what is the average age of COS students? _____

You will draw a sample of 10 students from a group of 76 students using systematic sampling.

What is *N*? _____

What is *n*? _____

Compute *k*. $\left(k = \frac{N}{n}, \text{round down to the previous whole number} \right)$ _____

Select a random number between 1 and *k* for *p*. What value of *p* are you using? _____

On the data handout, use systematic sampling to select your sample of 10 students.

How many students were female? _____

What percentage of your sample is female? _____

Data for 76 Students

Student	Gender	Student	Gender	Student	Gender	Student	Gender
1	Female	21	Female	41	Female	61	Female
2	Female	22	Female	42	Male	62	Male
3	Male	23	Male	43	Male	63	Male
4	Female	24	Male	44	Female	64	Female
5	Male	25	Male	45	Female	65	Female
6	Male	26	Male	46	Female	66	Male
7	Female	27	Female	47	Female	67	Female
8	Female	28	Female	48	Male	68	Female
9	Female	29	Male	49	Male	69	Female
10	Female	30	Male	50	Female	70	Female
11	Female	31	Male	51	Female	71	Female
12	Female	32	Female	52	Female	72	Female
13	Male	33	Female	53	Male	73	Male
14	Female	34	Male	54	Male	74	Male
15	Male	35	Female	55	Male	75	Male
16	Male	36	Male	56	Male	76	Female
17	Male	37	Female	57	Female		
18	Female	38	Female	58	Male		
19	Female	39	Male	59	Female		
20	Female	40	Male	60	Male		

Using Random Sampling (Using StatCrunch)

Log in to StatCrunch. (Go to statcrunch.com, or inside MyMathLab click the StatCrunch button on the left side of the screen.) The user name & password are the same as they are for MyMathLab.

Under MyStatCrunch, click on Open StatCrunch.

Press the **Data** button, and from **Simulate data** select **Discrete Uniform**.

Rows: 15 (Extra in case of duplicates), Columns: 1, Minimum: 1, Maximum: 76

Click **Simulate**.

On the data handout, use the first 10 unique values from StatCrunch to select the 10 students in your survey.

How many students were female? _____

What percentage of your sample is female? _____

Random Sampling with StatCrunch

To open the data set in StatCrunch, you must go to the StatCrunch group page for our class.

- If you have already joined the group, under **My StatCrunch** select **My Groups**. Click on the link for *Woodbury Math 21 – Fall 2016*.
- If you have not already joined the group, click on **Explore** at the top of the screen in StatCrunch and select **Groups**.

  In the Search box at the top left, type Woodbury and then search. To join the group, click on *Woodbury Math 21 – Fall 2016*.

Once you are on the group page, click on the **Woodbury Sampling** data set.

You will draw a sample of 20 students from a group of 76 students using StatCrunch, following the instructions on the next page.

Press the **Data** button, and select **Sample columns**.

Under **Select Columns**, click on ***Smoking, iPhone,*** and ***Books***. (These are the columns containing the data.)

Under **Sampling details**, set **Sample size** to be 20 and check the box labeled **Sample all columns at one time**.

Click the **Sample Column(s)** button at the bottom of the screen.

Your sample will be listed in the columns labeled ***Sample(Smoking), Sample(iPhone),*** and ***Sample(Books)***.

(You will have to scroll down to see all 20 rows of data.)

How many students were smokers? _____

What percentage of your sample are smokers? _____

How many students own an iPhone? _____

What percentage of your sample own iPhones? _____

Compute the total expense on books/supplies for your 20 students in your sample. _____

Compute the average expense on books/supplies for your sample. _____