Exercise 9.5 Read the Exercise on Pages 492 & 493 of The *Practice of Statistics* 2nd ed.

Toss coin a quarter 20 times.

Let it hit the floor

1. Record the proportion of heads.
2. REPEAT for total of TEN repetitions.
	1. Is the center of the distribution close to 0.5? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Describe the shape \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Is the sampling variability low/moderate/high? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| 1 | Number of headsout of 20 flips | Percent Heads ($\hat{p}$) |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
|  |

|  |  |
| --- | --- |
| Total |  |

 |

|  |  |
| --- | --- |
| Avg |  |

 |

9.6

1. How does this relate to tumbling toast?
	1. Challenge: Design another (hopefully better) simulation?
2. Make a Histogram on the back.
3. How much sampling variability is there?
4. Go to <http://sites.google.com/site/tinspiregroup/assignments>

Go to the bottom of the page under Statistics and down load “Tumbling\_Toast.”

You will also need the document player from <http://education.ti.com/calculators/products/US/document-player/>

1. Change the Sample\_Size to 1, 2, 10, 20, 50, 100, and 500 and observe the results.
	1. What observations did you make?
2. Set the Sample\_Size to 10. Now change the Reps to 1, 2, 10, 20, 50, 100, 500.
	1. What observations did you make?
3. Make changes in a systematic manner to BOTH the Sample\_Size AND Reps.
	1. What additional conclusions did you discover?