

## Unit 2 Discussion Example - Second Response to a Classmate's Post

**Second response:** Choose another classmate's post to respond to. Create a question that can be answered using the cumulative probability in their probability table. Answer the question in your own words.

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Using the scenario: Smartphone adoption among American young adults has increased substantially and mobile access to the Internet is pervasive. Fifteen percent of young adults who own a smartphone are "smartphone-dependent," meaning that they do not have home broadband service and have limited options for going online other than their mobile device. (Data extracted from "U.S. Smartphone Use in 2015," Pew Research Center, April 1, 2015.)

Sample size,  $n = 10$

Probability of event of interest,  $\pi = 0.15 = 15\%$

What is the probability that 1, 2, 3, 4, or 5 of the 10 young adults' samples are smartphone dependent?

The cumulative probability of 1, 2, 3, 4 or 5, of the 10 young adults sampled is smartphone dependent is  $0.9986 = 99.86\%$ . That is pretty high!

Binomial Probabilities Table						
$X$	$P(X)$	$P(\leq X)$	$P(< X)$	$P(> X)$	$P(\geq X)$	
0	0.1969	0.1969	0.0000	0.8031	1.0000	
1	0.3474	0.5443	0.1969	0.4557	0.8031	
2	0.2759	0.8202	0.5443	0.1798	0.4557	
3	0.1298	0.9500	0.8202	0.0500	0.1798	
4	0.0401	0.9901	0.9500	0.0099	0.0500	
5	0.0085	0.9986	0.9901	0.0014	0.0099	
6	0.0012	0.9999	0.9986	0.0001	0.0014	
7	0.0001	1.0000	0.9999	0.0000	0.0001	
8	0.0000	1.0000	1.0000	0.0000	0.0000	
9	0.0000	1.0000	1.0000	0.0000	0.0000	
10	0.0000	1.0000	1.0000	0.0000	0.0000	