Random integers using the graphing calculator

Using the graphing calculator:

Math: → PRB → 5. RandInt(

RandInt(1,100) generates random integers from 1 to 100.

A small sidewalk cafe can seat only 12 people and it's popular so you need a reservation. From experience they know that 20% of those who make reservations don't show up. The restaurant takes 15 reservations for dinner.

How often are they overbooked?

They will be overbooked for what number of No-shows?

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Make a simulation to find this probability:

- Generate random integers from 1 to 100
- Define the numbers from 1 to 20 to represent people not showing up for their reservation.
- Each trial will consist of 15 random numbers.
- Do 25 trials and record how many times the numbers from 1 to 20 appear.
- If 2,1, or 0 people don't show up then they are overbooked.

Trial #	# of No-shows (#'s from 1-20)	Is the Cafe Overbooked?
1		
2		
3		
4		
5		
6		
7		
⋮		
25		

times overbooked out of 25

Group	# times overbooked
1	15
2	15
3	13
4	8
5	14
6	7
7	10
8	8
9	11
10	14
11	
12	
13	
14	
15	

P(overbooked)= $\frac{115}{250}$

$\frac{115}{250}$ =

I will let you use the car under one condition....

	Snickers	Reeses	KitKat	Skittles	Total
Male	18	32	28	13	91
Female	20	29	19	22	90
Total	38	61	47	35	181

What is the probability that the next person you select likes Reeses under the one condition you must pick a female?

P(Reeses | Female) = $\frac{29}{90}$

P(KitKat | Male) = $\frac{28}{91}$

Conditional Probability:

Probability that has a restriction limiting the sample space.

P(B | A): "The probability of B given the condition A must be true."

	Snickers	Reeses	KitKat	Skittles	Total
Male	18	32	28	13	91
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Find each conditional probability. Give answer as a decimal.

1. P(Male | Reeses) = $\frac{32}{61} = .52$

2. P(KitKat | Female) = $\frac{19}{90} = .21$

Find each conditional probability as a decimal rounded to the nearest thousandth.

	ABC	*NBC*	*Fox*	*CBS*	*total*
male	12	8	15	5	40
female	9	14	10	7	40
total	21	22	25	12	80

a) P(Male | NBC) = $\frac{8}{22} = .364$

b) P(CBS | Female) = $\frac{7}{40} = .175$

c) P(Female | ABC) = $\frac{9}{21} = .429$

d) P(Fox | Male) = $\frac{15}{40} = .375$