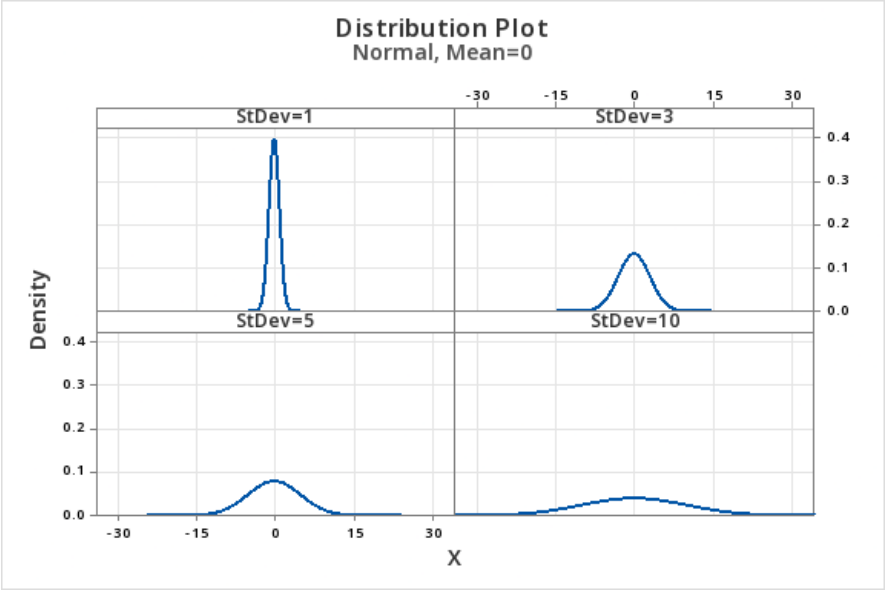
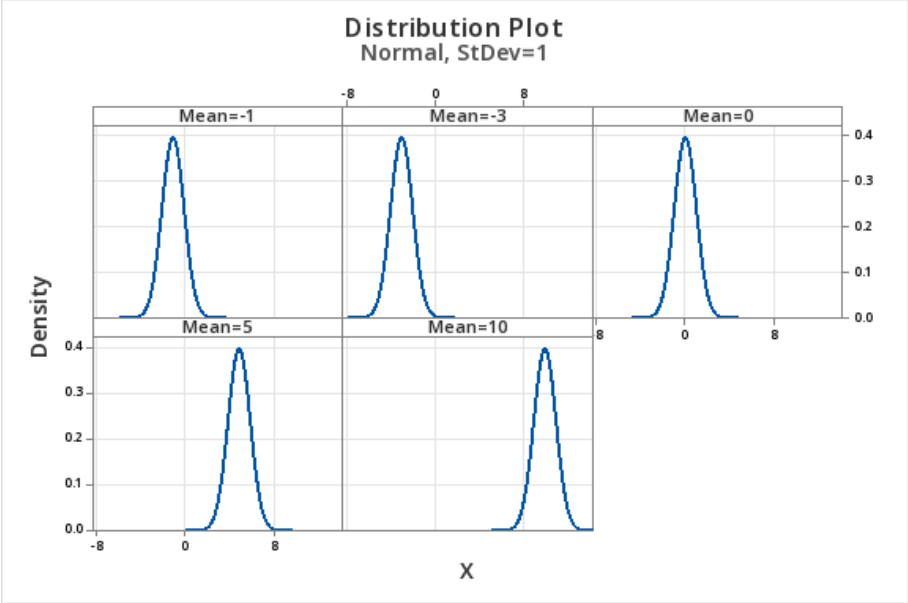
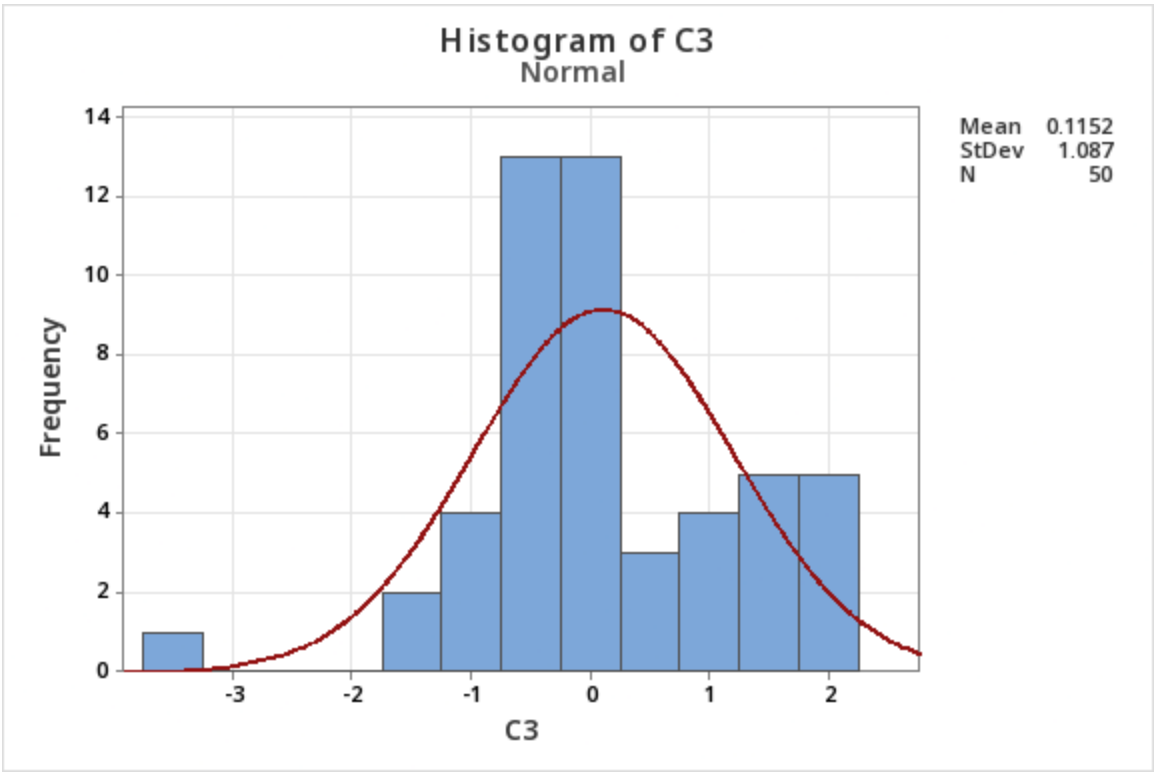
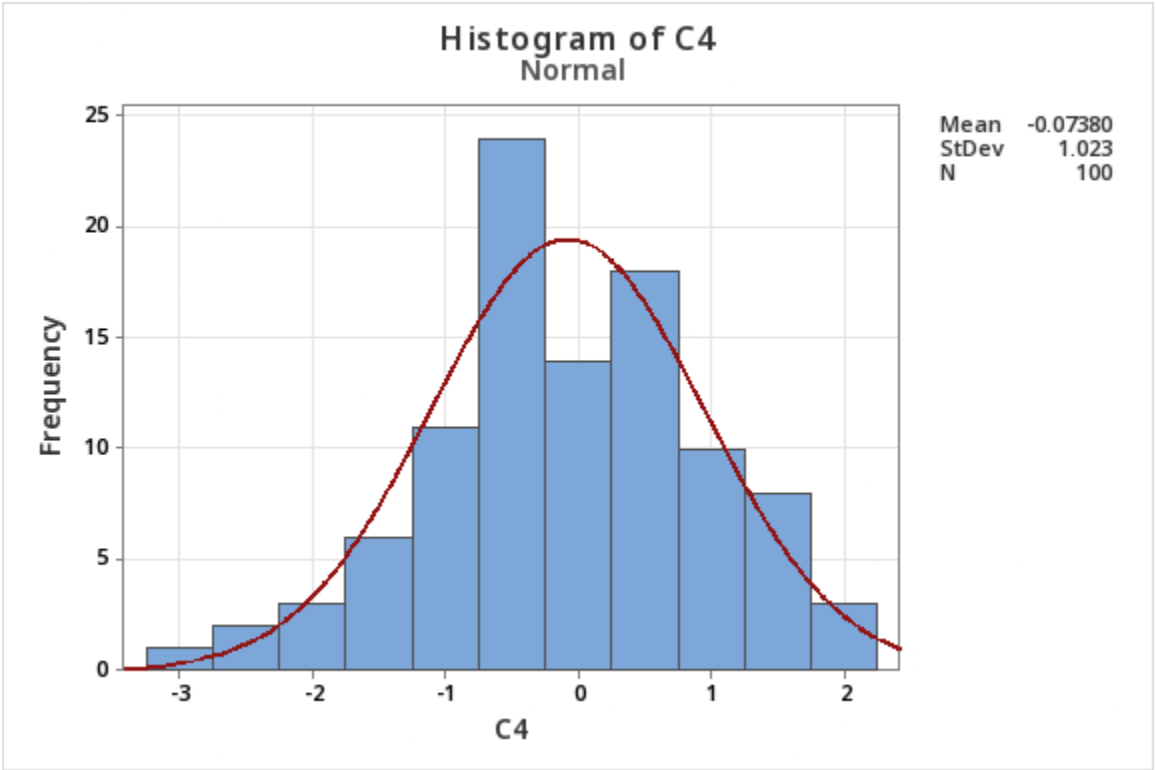


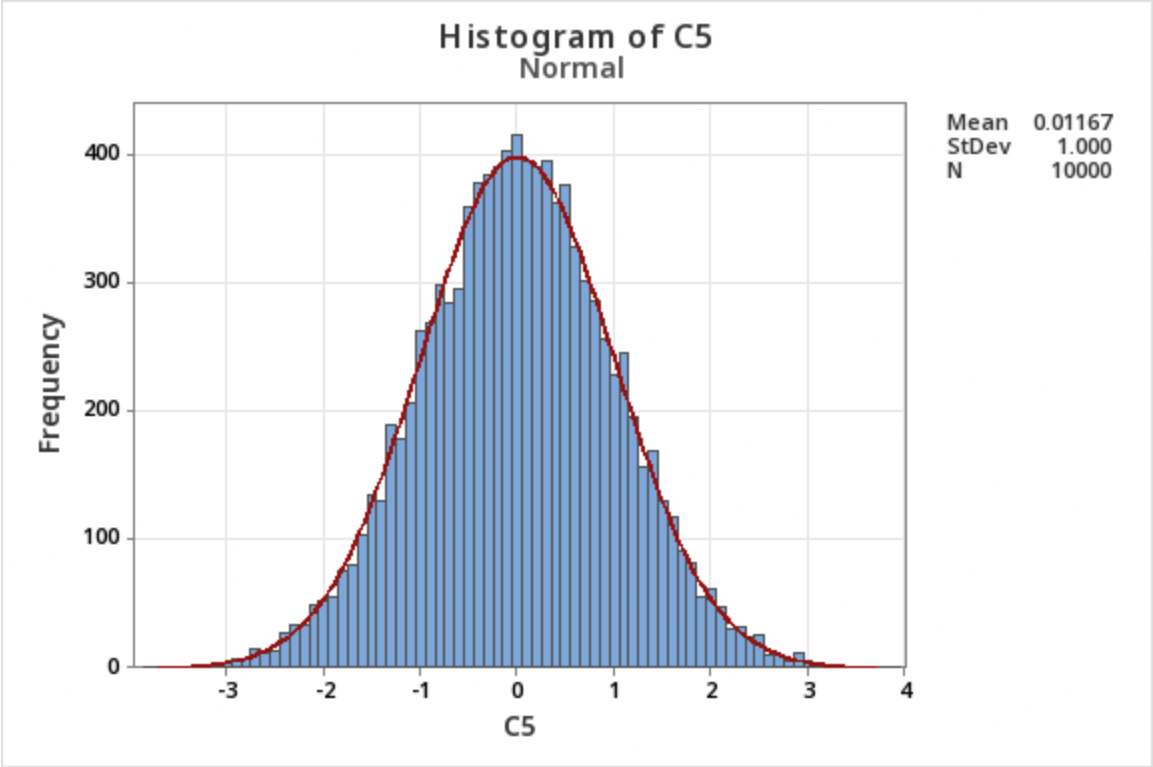
In these plots, as standard deviation increases the PDF becomes more spread out. When mean is 0 and standard deviation is 1 the max value of PDF is approx. 0.4 and at standard deviation 5 the max value of PDF is approx. 0.08. If the random variable had a standard deviation of 0 this means there is no change in the distribution and every value is the same.



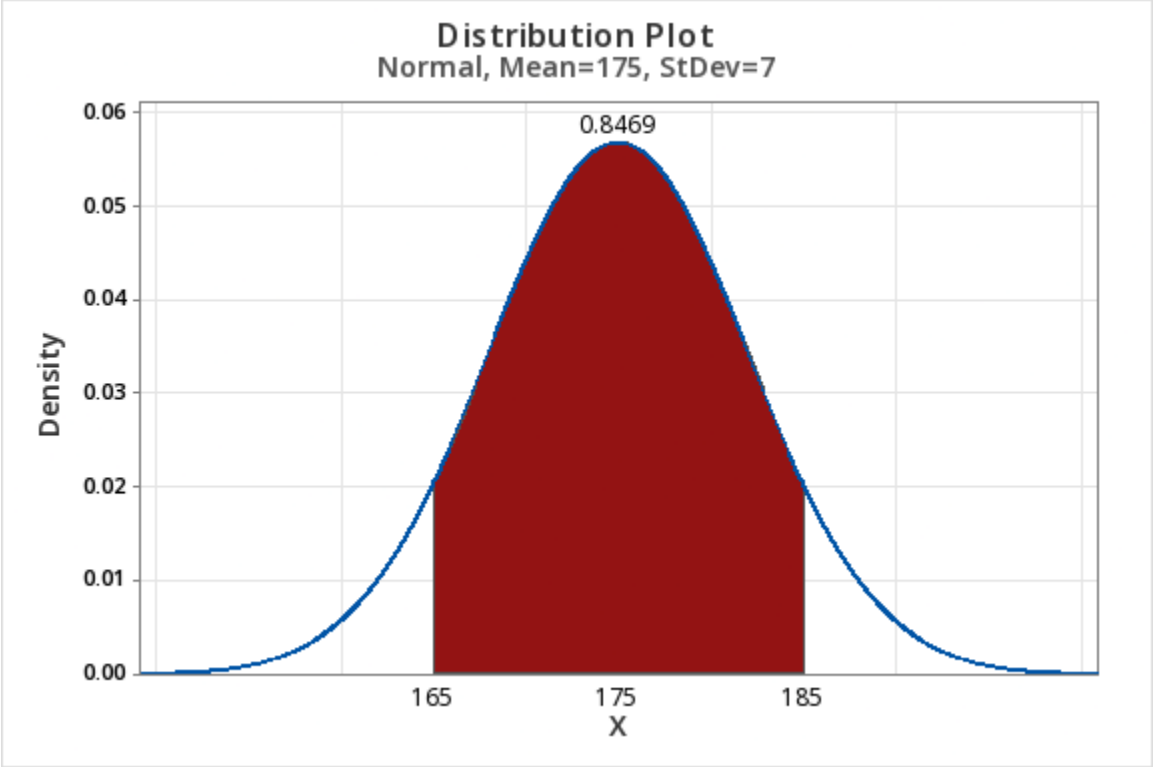
As mean increases in the PDF it shifts the mode along the x axis based on the mean value. $\Pr(-a < Z < a) = 1.000$, the value of a to make this true is a =100. The probability that a normal random variable with mean 68 and standard deviation 2.5 between 64 and 70 is 73%.


Histogram of C3
Normal
Mean 0.1152
StDev 1.087
N 50
Frequency
C3
0
2
4
6
8
10
12
14
-3
-2
-1
0
1
2


Histogram of C4
Normal
Mean -0.07380
StDev 1.023
N 100
Frequency
C4
0
5
10
15
20
25
-3
-2
-1
0
1
2



As sample size increases the distribution becomes more and more normal.



Human heights the mean height is 175cm & standard deviation of 7cm, P(165 < X < 185) is 85%

Statistics

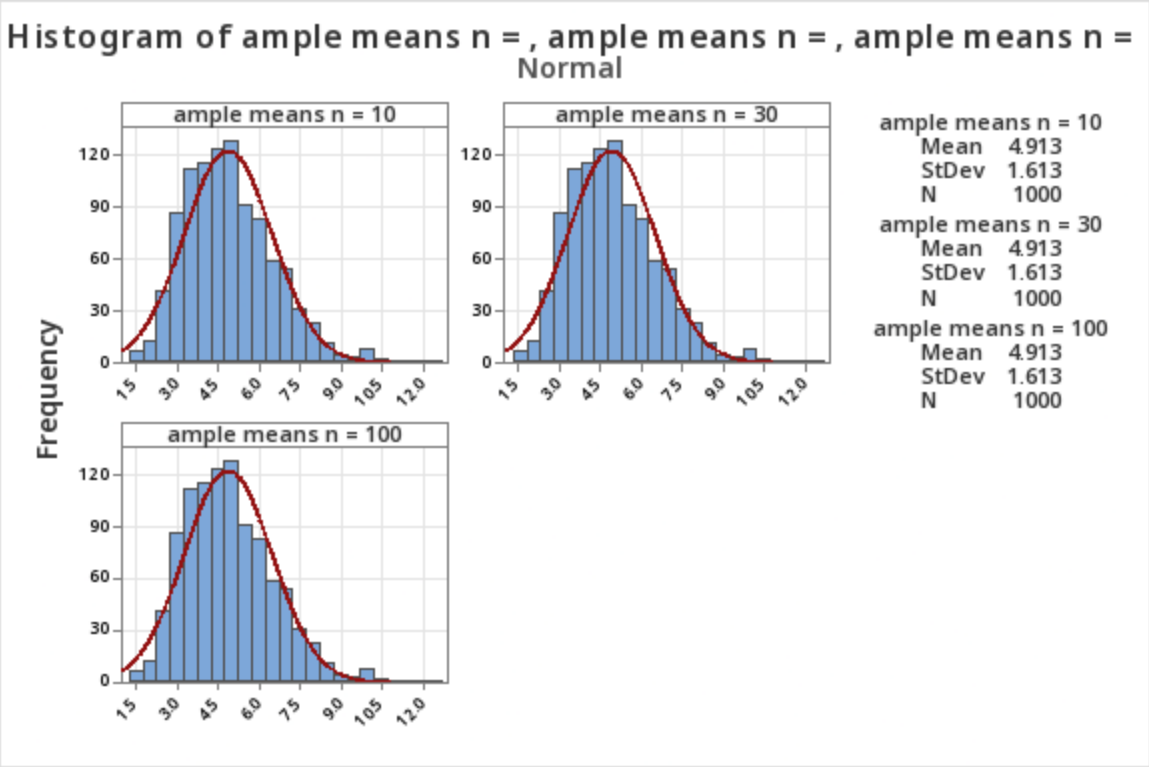
Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
C1	1000	0	4.9126	0.0510	1.6129	1.4375	3.7088	4.7527	5.8619	12.4631

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
ample means n = 30	1000	0	4.9126	0.0510	1.6129	1.4375	3.7088	4.7527	5.8619	12.4631

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
ample means n = 100	1000	0	4.9126	0.0510	1.6129	1.4375	3.7088	4.7527	5.8619	12.4631



Each chart is relatively the same (In the project description/to do this section for this, we are just assigning 1000 random samples, I don't think we actually change the sample sizes, otherwise if the sample size were to increase from 10 to 30 to 100 you would see the distribution become more normal with the larger sample sizes.)