```
> #This is my attempt to do the worksheet on confidence
> # intervals for 1 population, sigma unknown
> #
> # One Population: sigma unknown
>
> # we need to put the functin ci_known() into our
> # environment
>
> source("../ci_unknown.R")
>
> # Case 1;
> #  I will store the required values in variables just so that
> # it is clear which values go where in the function
>
> n_1 <- 48
> s_1 <- 9.16
> xbar_1 <- 75.86
> ci_level <- 0.78
> area_to_right <- (1-ci_level)/2
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 1.243091
> ci_unknown( s_1, n_1, xbar_1, ci_level )
   CI Low   CI High       MOE Std Error
74.216470 77.503530  1.643530  1.322132
> #
> #
> # Case 2
> n_1 <- 50
> s_1 <- 10.69
> xbar_1 <- 150.15
> ci_level <- 0.94
> area_to_right <- (1-ci_level)/2
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 1.925348
> ci_unknown( s_1, n_1, xbar_1, ci_level )
    CI Low    CI High        MOE  Std Error
147.239270 153.060730   2.910730   1.511794
> #
> #
> # Case 3
> n_1 <- 26
> s_1 <- 48.56
> xbar_1 <- 3.88
> ci_level <- 0.88
> area_to_right <- (1-ci_level)/2
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 1.60979
> ci_unknown( s_1, n_1, xbar_1, ci_level )
   CI Low   CI High       MOE Std Error
-11.45067  19.21067  15.33067   9.52340
> #
> #
> #
> # Case 4
> #
> # now we need to load gnrnd4 so that we can use it to
> # generate the  values in the table
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```
> source("../gnrnd4.R")
> # then we can generate the desired values of the table
> gnrnd4(1179063404,7100655)
style= 4   size= 35    seed= 17906   num digits= 1   alt_sign= 1
[1] "DONE "
> # and now, we will look at the first and last six values
> # just to be sure we have the right values
> head(L1)
[1] 73.6 69.9 57.4 63.5 60.9 59.0
> tail(L1)
[1] 62.3 58.1 68.4 60.5 64.4 72.7
> #
> n_1 <- length( L1 )
> xbar_1 <- mean( L1 )
> s_1 <- sd( L1 )
> #
> # sample size, mean, and standard deviation
> n_1
[1] 35
> xbar_1
[1] 65.34
> s_1
[1] 6.090069
> #
> ci_level <- 0.94
> area_to_right <- (1-ci_level)/2
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 1.945666
> ci_unknown( s_1, n_1, xbar_1, ci_level )
   CI Low   CI High       MOE Std Error
63.337113 67.342887  2.002887  1.029410
> #
> # Case 5
> #
> #  we can generate the desired values of the table
> gnrnd4(6365034904,5400755)
style= 4   size= 50    seed= 36503   num digits= 1   alt_sign= -1
[1] "DONE "
> # and now, we will look at the first and last six values
> # just to be sure we have the right values
> head(L1)
[1] -66.5 -68.9 -82.2 -76.5 -80.8 -79.0
> tail(L1)
[1] -86.6 -74.4 -73.8 -81.5 -82.0 -73.5
> #
> n_1 <- length( L1 )
> xbar_1 <- mean( L1 )
> s_1 <- sd( L1 )
> #
> # sample size, mean, and standard deviation
> n_1
[1] 50
> xbar_1
[1] -74.68
> s_1
[1] 5.28556
> #
> ci_level <- 0.88
> area_to_right <- (1-ci_level)/2
```

```
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 1.582366
> ci_unknown( s_1, n_1, xbar_1, ci_level )
    CI Low    CI High        MOE  Std Error
-75.862804 -73.497196   1.182804   0.747491
> #
>
>
> # Case 6
> #
> #  we can generate the desired values of the table
> gnrnd4(1179402904,15700023)
style= 4   size= 30    seed= 17940   num digits= 1   alt_sign= 1
[1] "DONE "
> # and now, we will look at the first and last six values
> # just to be sure we have the right values
> head(L1)
[1]  13.1  17.4  14.3 -29.8   2.3   6.5
> tail(L1)
[1]  19.9  12.9  18.3  11.9   5.0 -15.9
> #
> n_1 <- length( L1 )
> xbar_1 <- mean( L1 )
> s_1 <- sd( L1 )
> #
> # sample size, mean, and standard deviation
> n_1
[1] 30
> xbar_1
[1] 5.043333
> s_1
[1] 18.03265
> #
> ci_level <- 0.98
> area_to_right <- (1-ci_level)/2
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 2.462021
> ci_unknown( s_1, n_1, xbar_1, ci_level )
   CI Low   CI High       MOE Std Error
-3.062369 13.149036  8.105702  3.292296
> #
> # Case 7:
> #
> #  we can generate the desired values of the table
> gnrnd4(6437249104,157500720)
style= 4   size= 92    seed= 43724   num digits= 1   alt_sign= -1
[1] "DONE "
>
> # and now, we will look at the first and last six values
> # just to be sure we have the right values
> head(L1)
[1]   37.4  136.8 -201.3  218.9   -8.7  -16.4
> tail(L1)
[1] -178.4 -170.8 -159.9  -28.6 -154.9 -192.4
> #
> n_1 <- length( L1 )
> xbar_1 <- mean( L1 )
> s_1 <- sd( L1 )
```

```
> #
> # sample size, mean, and standard deviation
> n_1
[1] 92
> xbar_1
[1] -76.61739
> s_1
[1] 166.4225
> #
> ci_level <- 0.92
> area_to_right <- (1-ci_level)/2
> t <- qt( area_to_right, n_1 - 1, lower.tail=FALSE)
> t
[1] 1.770456
> ci_unknown( s_1, n_1, xbar_1, ci_level )
    CI Low    CI High        MOE  Std Error
-107.33613  -45.89865   30.71874   17.35075
> #
```