

Outputs from various softwares -- single population

DATA

```
> a <- round(rnorm(20, 2, 2),3)
```

```
> a
 [1] 1.338 -1.547 2.275 3.621 0.097 -0.352 2.215 1.517 1.837
[10] 1.078 4.584 1.644 3.337 -2.667 3.772 -1.606 5.008 0.379
[19] 1.603 0.824
```

1. R Output

```
> t.test(a,mu = 1.8, alternative = c("greater"))
```

One Sample t-test

```
data: a
t = -0.7691, df = 19, p-value = 0.7744
alternative hypothesis: true mean is greater than 1.8
95 percent confidence interval:
 0.6561246      Inf
sample estimates:
mean of x
 1.44785
```

2. Minitab Output:

One-Sample T: x

Test of $\mu = 1.8$ vs > 1.8

| Variable | N | Mean | StDev | SE Mean | 95% Lower Bound | T | P |
|----------|----|-------|-------|---------|--------------------|-------|-------|
| x | 20 | 1.448 | 2.048 | 0.458 | 0.656 | -0.77 | 0.774 |

3. SPSS Output:

➔ **T-Test**

[DataSet1]

One-Sample Statistics

| | N | Mean | Std. Deviation | Std. Error Mean |
|---|----|---------|----------------|-----------------|
| x | 20 | 1.44785 | 2.047676 | .457874 |

One-Sample Test

| Test Value = 1.8 | | | | | | |
|------------------|-------|----|-----------------|-----------------|---|--------|
| | t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| | | | | | Lower | Upper |
| x | -.769 | 19 | .451 | -.352150 | -1.31049 | .60619 |

4. SAS Output:

The SAS System

The TTEST Procedure

Variable: x

| N | Mean | Std Dev | Std Err | Minimum | Maximum |
|----|--------|---------|---------|---------|---------|
| 20 | 1.4479 | 2.0477 | 0.4579 | -2.6670 | 5.0080 |

| Mean | 95% CL Mean | Std Dev | 95% CL Std Dev |
|--------|-------------|---------|----------------|
| 1.4479 | 0.6561 | Infy | 2.9908 |

| DF | t Value | Pr > t |
|----|---------|--------|
| 19 | -0.77 | 0.7744 |