How To: Use the Normal Distribution
Using the TI-84

1. Turn on the calculator by pressing the **ON** button (lowest left hand button).

2. Press **2nd** and then **VARS,** this will pick **DISTR**.

3. If you are interested in the area under the normal curve with degrees with mean μ and standard distribution σ:

   a) For, P(a ≤ x ≤ b), select **normalcdf(**, then enter **a, b, μ, σ)**. Press **ENTER**.
   b) For P(a ≤ x), select **normalcdf(**, then enter **a, 10 ^ 99, μ, σ)**. Press **ENTER**.
   c) For P(x ≤ b), select **normalcdf(**, then enter "**(-)**" **10 ^ 99, b, μ, σ)**. Press **ENTER**.

4. If you want to find the z-score with area of p to the left, then select **invNorm(**, then enter **p)**. Press **ENTER**.

5. To find the x value with area p to the left when x ~ N(μ, σ), select **invNorm(**, and then enter **p, μ, σ)**. Press **ENTER**.

Note: The "**(-)**" is indicating the button on the bottom row of the calculator, next to the "**.**".

Example to follow on next page →

Example:

2. If you are interested in the area under the normal curve with mean 4 and standard distribution 2:

   a. For, P(1 ≤ x ≤ 2), select **normalcdf(**, then enter **1, 2, 4, 2)**. Press **ENTER**.

   ```
   normalcdf(■
   ```

   ```
   normalcdf(1,2,4,
   2)
           .0918480308
   ```

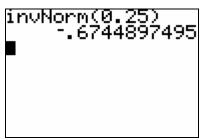   b. For P(1 ≤ x), select **normalcdf(**, then enter **1, 10 ^ 99, 4, 2)**. Press **ENTER**.

   ```
   normalcdf(■
   ```

   ```
   normalcdf(1,10^9
   9,4,2)
           .9331927713
   ■
   ```

c. For P(x ≤ 1), select **normalcdf(**, then enter "**(-)**" **10 ^ 99, b, μ, σ)**. Press
    ENTER.

```
normalcdf(█
```

```
normalcdf( -10^99
,1,4,2)
        .0668072287
```

3. If you want to find the z-score with area of 0.25 to the left, then select **invNorm(**, then
    enter **0.25)**. Press
    ENTER.

```
invNorm(█
```

```
invNorm(0.25)
      -.6744897495
█
```

5. To find the x value with area 0.25 to the left when x ~ N(4, 2), select **invNorm(**, and then enter **0.25**, **4, 2)**. Press **ENTER**.

```
invNorm(█
```

```
invNorm(0.25,4,2
)
          2.651020501
```