

## Expected Values (Means) and SDs of Random Variables

You can easily calculate means (expected values) and standard deviations for a random variable.

| L1           | L2    | L3    | 1 |
|--------------|-------|-------|---|
| 0<br>5<br>50 | ----- | ----- |   |
| L1(4)=       |       |       |   |

Let's use the "No Ones, Twos, or Threes" example.

Enter the values of the variable in **L1**.

| L1                    | L2                   | L3    | 2 |
|-----------------------|----------------------|-------|---|
| 0<br>5<br>50<br>----- | .5<br>33333<br>----- | ----- |   |
| L2(3) = 1/6           |                      |       |   |

Enter the probability model (the probabilities) in **L2**. To get *exact* values, enter them as fractions – the calculator will convert them into decimals for you!

|                  |
|------------------|
| 1-Var Stats L1,L |
| 2                |

Under the **STAT CALC** menu, select option **1:1-Var Stats**.

|                        |
|------------------------|
| 1-Var Stats            |
| $\bar{x}=10$           |
| $\Sigma x=10$          |
| $\Sigma x^2=425$       |
| $Sx=$                  |
| $\sigma x=18.02775638$ |
| $\downarrow n=1$       |

Calculate **1-Var Stats L1,L2**.

You'll see the mean (expected value) and standard deviation...along with some other values.

**BEWARE:** The calculator calls the standard deviation  $\sigma$  (which is good!), but it calls the mean  $\bar{x}$ , when it *should* call it  $\mu$ . **Don't make the same mistake!**