

Finding the Area Under a Normal Curve

This page documents one method for finding the area under the curve (cumulative probability) in JMP for one value or for multiple values of a normally distributed continuous variable.

Find the area under a normal curve (one value)

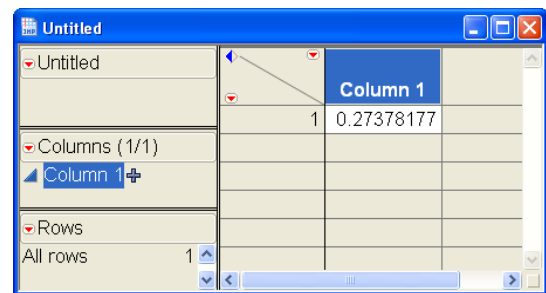
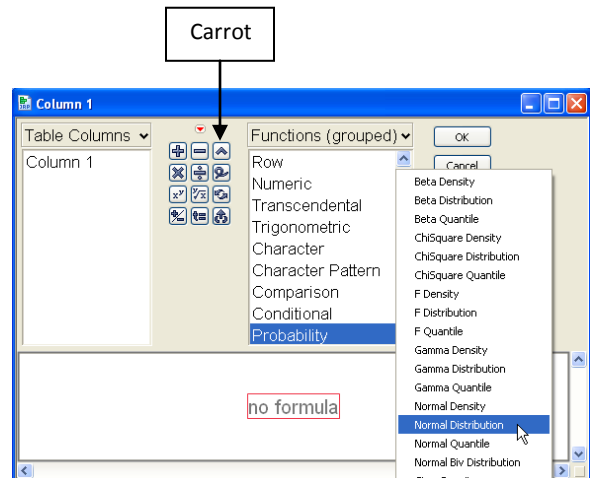
1. Select **File > New > Data Table** - the new table will have one column.
2. Add one row - select **Rows > Add Rows**, and type "1"
3. Right click on **Column 1**, and select **Formula** to access the formula editor.
4. Under **Functions (grouped)**, select **Probability > Normal Distribution**. This will give the following formula:

Normal Distribution [x]

5. Click the carrot on the keypad twice to add fields for the mean and standard deviation.

Normal Distribution [x, mean, std dev]

6. In the fields provided, type the value of x, the mean, and the standard deviation.
7. Click OK. JMP will populate the row with the probability value (the area under the normal curve).



Find the area under a normal curve (multiple values)

1. Open an existing data table (**File > Open**), or open a new data table (**File > New > Data Table**) and create a column containing the values of interest.
2. Select **Cols > New Column** to create an additional column, and rename the column. We'll name our column **Prob Height**.
3. Click **Column Properties**, and select **Formula** to access the **JMP Formula Editor**.
4. Follow steps 4 and 5 above.
5. Click on the box containing "x", and from **Table Columns**, select the variable name.
6. Type the mean and standard deviation in the fields provided.
7. Click **OK**. JMP will populate the column with cumulative probability values for each value of the variable.

Normal Distribution [height, 62.55, 4.24]

	name	age	sex	height	weight	Prob Height
1	KATIE	12	F	59	95	0.20122205
2	LOUISE	12	F	61	123	0.35734446
3	JANE	12	F	55	74	0.03748397
4	JACLYN	12	F	68	145	0.79208564
5	LILLIE	12	F	52	64	0.00641944