

# XmR chart for new application backlog

Step 1: Record your data

Date	Data
April 13	21
April 20	10
April 27	8
May 4	8
May 12	9
May 18	3
May 25	12
June 1	11
June 8	12
June 15	16

Step 2: Compute moving ranges

Moving range
n/a
11
2
-
1
6
9
1
1
4

Step 3: Draw a run chart of the data from step 1.

Step 4: Compute the average of your data:

**11**

$\bar{X}$  or X-bar

Step 5: Draw the center line on your chart (using the value from Step 4).

Step 6: Compute the average moving range:

**3.89**

$\overline{mR}$  or MR-bar

Step 7: Compute the upper and lower natural process limits (NPL).

$$\bar{X} + (2.66 \times \overline{mR}) = \mathbf{21.34}$$

Upper NPL

$$\bar{X} - (2.66 \times \overline{mR}) = \mathbf{0.66}$$

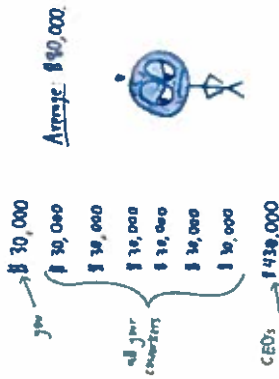
Lower NPL

Step 8: Draw the upper and lower natural process limits on your chart.



**Mean**

What would my study look like?  
I'm not at this way, an average study category is \$80,000!



**Median**

So, why should I invest with you?

Well, and to buy, but my fund has a median gain of \$3 per year!

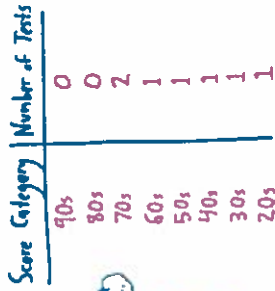


**Mode**

How are you doing on your tests?

My modal category is 70-100!

I have had no tests about the mean...



**Variance**

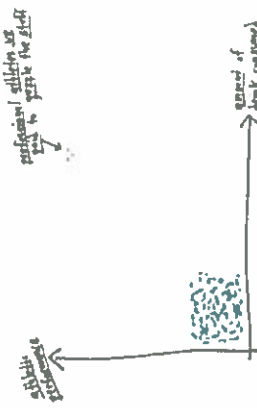
These results are a disaster!

Sure, they look bad, but there's a lot of variance! Don't rush to judgment.



**Correlation Coefficient**

To get every student it's highly correlated with performance!



**Range**

Our students come from a wide range of socioeconomic backgrounds...



Why not to trust statistics – source and credit for these images <https://mathwithbaddrawings.com/2016/07/13/why-not-to-trust-statistics/>

These drawings come from Ben Orlin's fabulous Math With Bad Drawings blog. This set of drawings shows a different statistical measure and how it can be misused in some way. The intention is to be aware when you are given a statistical measure how to interpret how it may not be giving you the larger picture. Take care! Follow Ben on Twitter @benorlin