Chapter Five Part Three: All Types of Normal Distributions

So far, we have used the standard normal distribution to:

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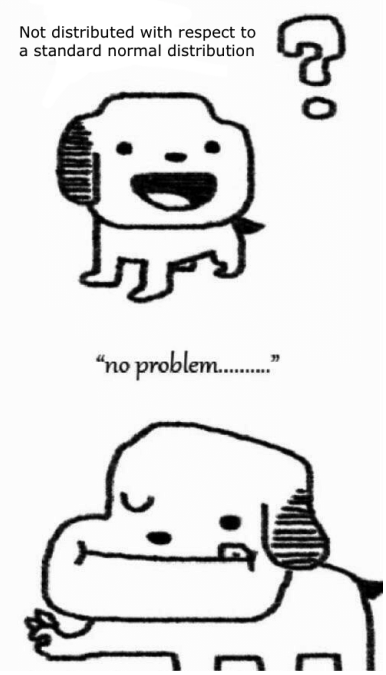
But what if the data isn't distributed as a standard normal distribution?



Even if our data is distributed with respect to a Normal distribution but not a standard Normal distribution, we can still standardize our data then compare it to a z-table!

Use: Change any normal model into a standard normal model using _____

Equation:

Remember:

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Example *Suppose I am 74.5 inchese tall (I wish). I want to know how my height compares to those of other people. Recall that we assume that heights are distributed* $N(70, 3)$*. What percentage of people are shorter than I, tall Charlotte?*

Example *What proportion of people are taller than 74 inches?*

Example *20% of people are taller than what height?*

Example *65% of people are shorter than what height?*

In general, an observation that is more than three standard deviations away from the mean is considered unusual.

Example *Would it be unusual to meet a person who is more than 80 inches tall? Why or why not?*

Example *Would it be unusual to meet a person who is shorter than 56 inches? Why or why not?*