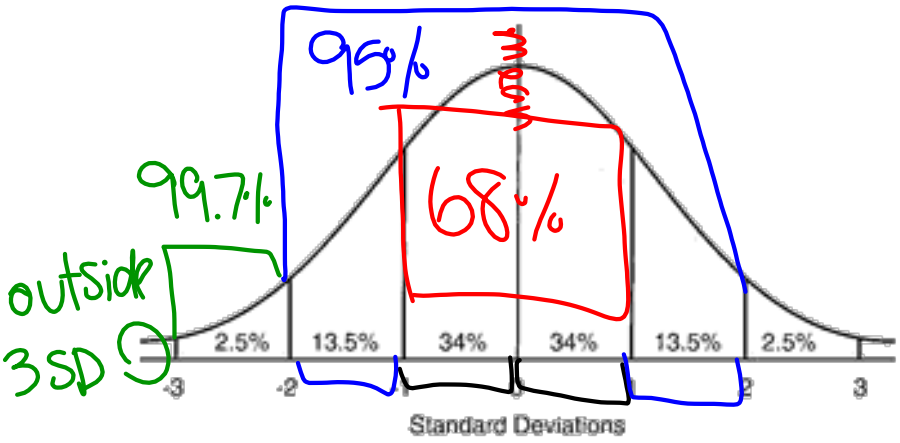
LT: Use the standard normal curve to study properties of normal distributions of data

ONLY FOR NORMAL DISTRIBUTION!!

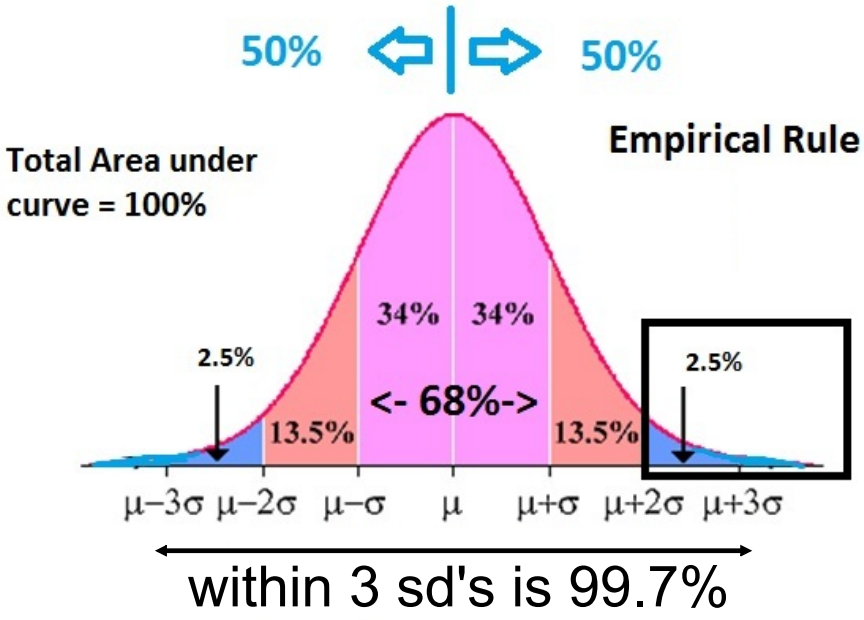


From the mean, 68.2% of the data is within 1 standard deviation.

Standard deviation is the measure of how far data is from the mean, on average.

This is also referred to as the

EMPIRICAL RULE - 68 - 95 - 99.7

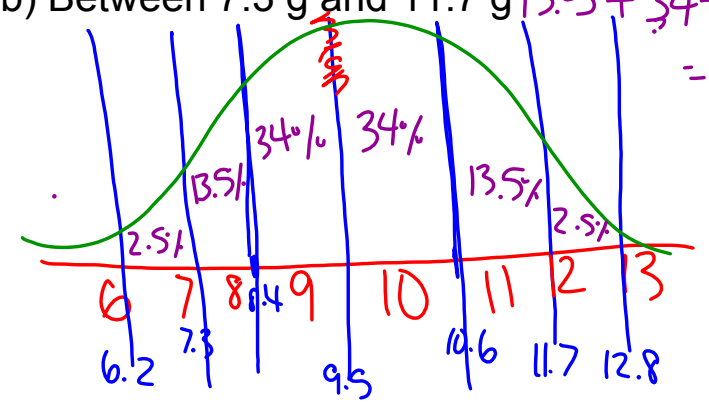


within 3 sd's is 99.7%

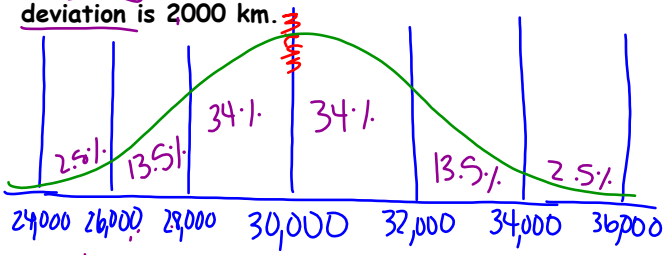
Assume that the mean weight of 1 year old girls in the US is normally distributed with a mean of 9.5 grams with a standard deviation of approximately 1.1 grams. Estimate the percentage of 1 year old girls in the US that meet the following conditions. Draw a sketch to help!

a) Less than 8.4 g $13.5+2.5=16\%$

b) Between 7.3 g and 11.7 g $13.5+34+34+13.5=95\%$



The mean life of a tire is 30,000 km. The standard deviation is 2000 km.



68% of all tires will have a life between 28,000 km and 32,000 km.

95% of all tires will have a life between 26,000 km and 34,000 km.

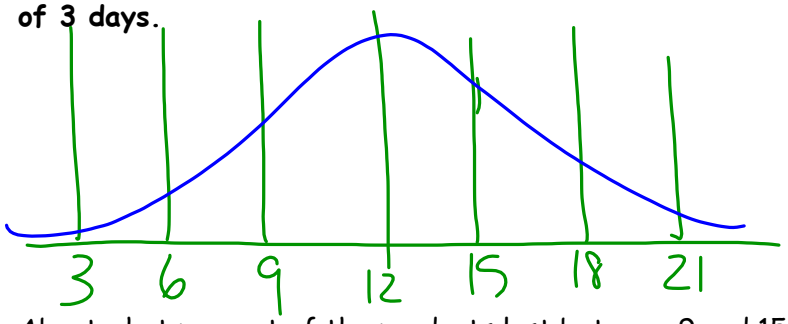
What percent of the tires will have a life that exceeds 26,000 km? $100-2.5=97.5\%$

If a company purchased 2000 tires, how many tires would you expect to last more than 28 000 km? 84%

$\frac{84}{100}=\frac{x}{2,000}$

$.84(2,000)=1,680$ tires

The shelf life of a particular dairy product is normally distributed with a mean of 12 days and a standard deviation of 3 days.



About what percent of the products last between 9 and 15 days?

About what percent of the products last between 12 and 15 days?

About what percent of the products last 6 days or less?

About what percent of the products last 15 or more days?

If Kroger purchases 2400 of these dairy products, how many of them would last more than 12 days?