

Ex #1

A normal distribution has a mean of 27 and a standard deviation of 5. Find the probability that a randomly selected x-value from the distribution is in the interval of 17 and 37.

95%

Ex #2

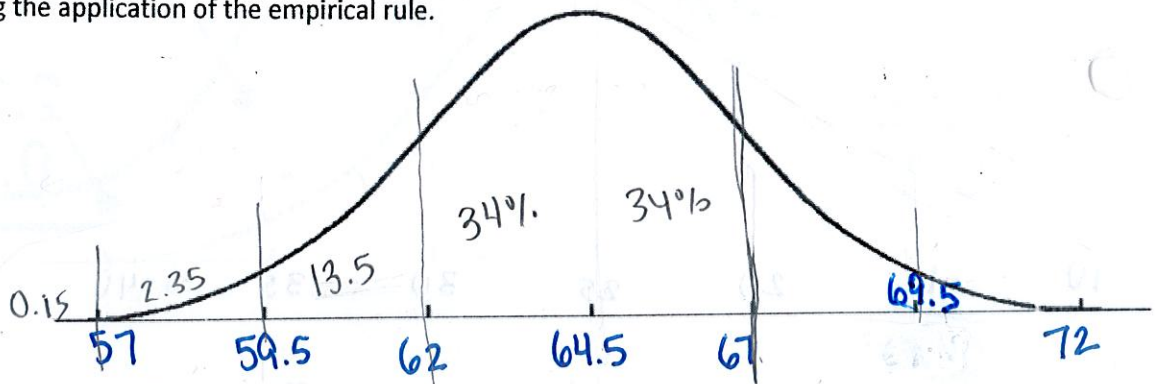
A normal distribution has a mean of \bar{x} and a standard deviation of σ . Find the probability that a randomly selected x-value from the distribution is in the interval $x \leq \bar{x} - 2\sigma$.

2.5%

Ex #3

The distribution of heights of young women aged 18 to 24 is approximately normal with a mean (\bar{x}) of 64.5 inches and a standard deviation (σ) of 2.5 inches.

- a) Draw a Normal Distribution curve to represent this data, clearly showing the application of the empirical rule.



- b) What percent of woman are taller than 69.5 inches?

$$2.35 + 0.15 = \boxed{2.5\%}$$

- c) Between what heights do the middle 95% of women fall?

$$59.5 - 69.5 \text{ inches}$$

- d) What percent of woman are shorter than 62 inches?

$$13.5\% + 2.35\% + 0.15\% = \boxed{16\%}$$

- e) A height of 67 inches corresponds to what percentile of adult female American heights?

$$68\% + 16\% = \boxed{84\%}$$