c. What percentage of the values in a normal distribution lie more than two standard deviations above the mean?

d. What percentage of the values in a normal distribution lie more than one standard deviation from the mean?

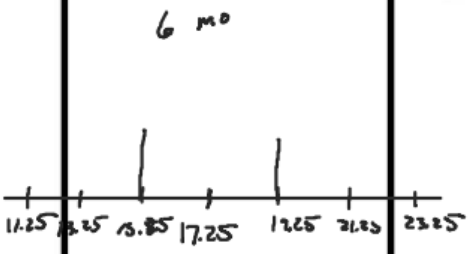
5. The weight of babies of a given age and gender are approximately normally distributed. This fact allows a doctor or nurse to use a baby's weight to find the weight percentile to which the child belongs. The table below gives information about the weights of six-month-old and twelve-month-old baby boys.

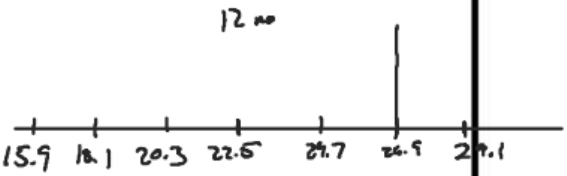
**Weights of Baby Boys**

| | Weight at Six Months (in pounds) | Weight at Twelve Months (in pounds) |
|---|---|---|
| Mean $\mu$ | 17.25 | 22.50 |
| Standard Deviation $\sigma$ | 2.0 | 2.2 |

**Source:** Tannenbaum, Peter, and Robert Arnold. *Excursions in Modern Mathematics*. Englewood Cliffs, New Jersey: Prentice Hall. 1992.

a. On a separate axis, draw sketches that represent the distribution of weights for six-month-old boys and the distribution of weighs for twelve-month-old boys. How do the distributions differ?




b. About what percentage of six-month-old weigh between 15.25 pounds and 19.25 pounds?

68%

| | |
|---|---|
| Percentile | c. About what percentage of twelve-month-old boys weigh more than 26.9 pounds?<br><br>d. A twelve-month-old boys weighs 24.7 pounds at what percentile is he for weight?<br><br>e. A six-month-old boy who weighs 21.25 pounds is at what percentile? |