

Graphwork ps 5.4

Curve 2. The larger the standard deviation the wider the graph or the wider the spread

$$\mu = 79.3$$

$$s = 2.6$$

$$a) 81.9 - 79.3 = \Delta = 2.6$$

$$\text{No. of standard deviations} : \frac{2.6}{2.6} = 1$$

$$b) \Delta = 79.3 - 76.7 = 2.6$$

$$\text{No. of standard deviations} = \frac{2.6}{2.6} = 1$$

$$c) Z\text{-score for } 81.9 \quad n=2$$

$$Z = \frac{X - \mu}{s/\sqrt{n}} = \frac{81.9 - 79.3}{2.6/\sqrt{2}}$$

$$= \frac{2.6}{1.838} = 1.4142$$

For 76.7

$$Z = \frac{76.7 - 79.3}{2.6/\sqrt{2}} = \frac{-2.6}{1.838} = -1.4142$$

A negative z-score means the data is to the left ^{of the mean} in the normal distribution curve.

A positive z-score means the data is to the right of the normal distribution curve.

$$\bar{x} = 235.72$$

$$s = 5.31$$

$$Z = \frac{X - \mu}{s} = \frac{256.96 - 235.72}{5.31} = 4$$

$$d) Z_{score} = \frac{X - \mu}{\sigma} = \frac{219.79 - 235.72}{5.31} \\ = -3$$

$$e) Z_{score} = \frac{X - \mu}{\sigma} = \frac{240 - 235.72}{5.31} = 0.80603$$

$$X = 335.30 \quad \mu =$$

$$S =$$

$$\bar{x} = 0$$

$$s = 1$$

a)

$$Z\text{-score} = \frac{x - \mu}{\sigma} = \frac{1 - 0}{1} = 1$$

$$\text{For } 2 = \frac{2 - 0}{1} = 2$$

$$\text{For } -1 = \frac{-1 - 0}{1} = -1$$

$$\text{For } x = -3.7 \quad Z\text{-score} = \frac{-3.7}{1} = -3.7$$

b) They are whole numbers distributed between positive and negative side of the mean.

c) when $x = 1$ and $x = -1$, we get a perfectly normal dist. $x = 2$ and $x = -3.7$ are unusual observations since they exceed Z -score of 1.96