

- The following exercises must be completed as a group and turned in at the end of class. Everyone has to write the answers and turn in their quiz. I will randomly select one of the quizzes to grade, and everyone in the group gets the same grade.

1. The numbers of matches won by 12 teams in the national league are 11, 5, 6, 6, 9, 10, 19, 14, 11, 9, 9, and 6.

(a) Find the standard deviation.

$$s = 3.96$$

(b) Find the variance.

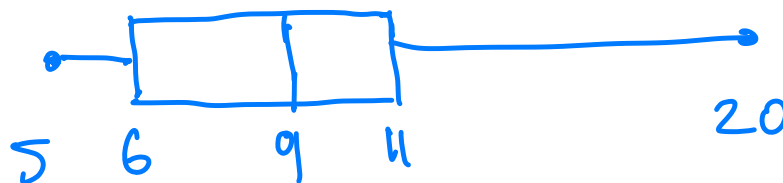
$$(3.96)^2 = (15.7)$$

(c) Find the 5 number summary.

$$\begin{aligned} \min &= 5 \\ Q_1 &= 6 \\ Q_2 &= 9 \end{aligned}$$

$$\begin{aligned} Q_3 &= 11 \\ \max &= 19 \end{aligned}$$

(d) Construct a box plot of the data.



(e) Are there any outliers?

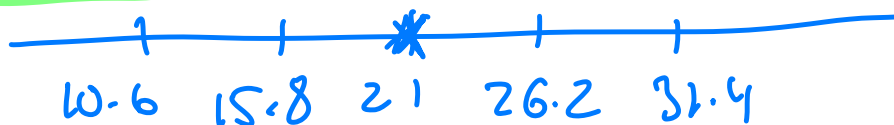
$$\begin{aligned} \text{yes} \quad Q_3 + (1.5) IQR &= 11 + 1.5(5) \\ &= 18.5 \end{aligned}$$

so 19 is outliers

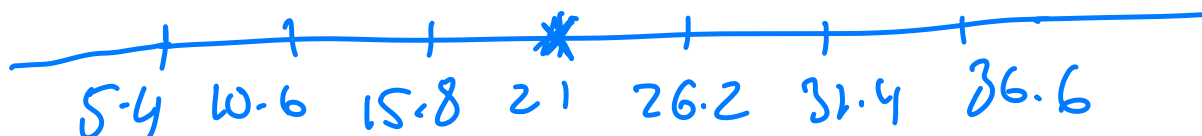
2. The average ACT score in 2010 was 21 with a standard deviation of 5.2 according to Digest of Educational Statistics.

(a) Using Empirical Rule, 95% of scores will be between what two scores?

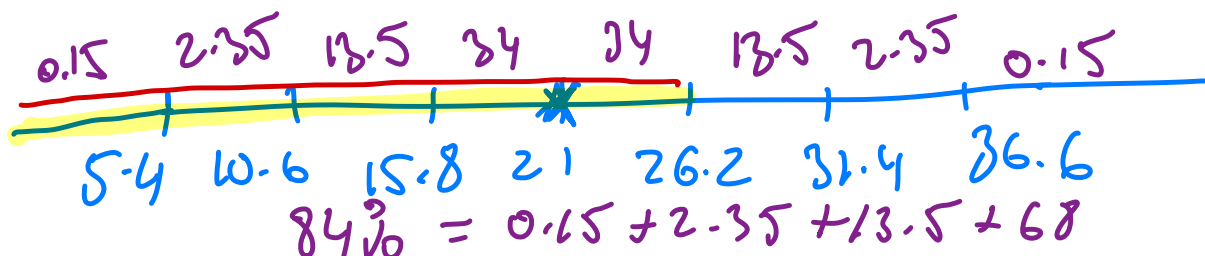
10.6 and 31.4



(b) Using Empirical Rule, what percentage of scores will be between 15.8 and 21?



(c) Using Empirical Rule, what percentage of scores are below 26.2?



(d) What is the z score corresponding to a test score of 18?

$$z_{18} = \frac{18 - 21}{5.2} = \frac{-3}{5.2} = -0.577$$

(e) You were told you your z score is 3.2. What is your test score?

$$3.2 = \frac{x - 21}{5.2} \quad \text{solve for } x$$

$$x - 21 = (3.2)(5.2)$$

$$x = 37.64$$