Instructions: Show all work. Use exact answers unless specifically asked to round. Explain thoroughly using complete sentences.

1. Use the data shown below to answer the questions that follow.

49	54	58	59	62	62	63	64	64	67
69	70	70	71	71	72	75	76	81	82

   a. Find the five-number summary.

   $\text{Min}: 49 \qquad Q_1 = 62 \qquad \text{Med} = \frac{67+69}{2} = 68$

   $Q_3 = 71.5 = \frac{71+72}{2} \quad \text{Max} = 82$

   b. What is the interquartile range (IQR)?

   $71.5 - 62 = 9.5$

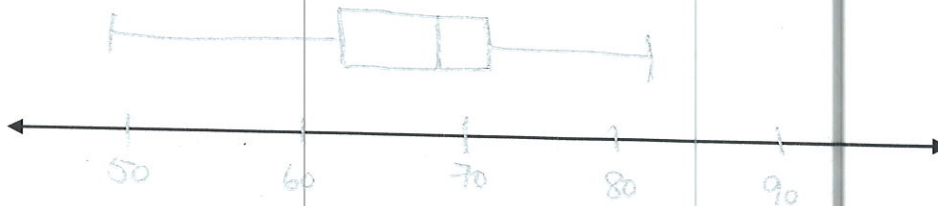   c. Find the upper and lower fences ($Q_i \pm 1.5IQR$)

   lower fence $\quad 62 - 1.5(9.5) = 47.75$

   upper fence $\quad 71.5 + 1.5(9.5) = 85.75$

   d. Are there any outliers? If so, what are they?

   no outliers

   e. Use the information above to construct a boxplot to scale.

2. Use the data in the table to the right to answer the questions that follow.
   a. What is the linear regression equation that models the data? Let age be x, and talk time be y.

   $y = 2.28x + 48.73$

Talk	Age
148	50
85	31
183	32
89	21
115	29
166	51
100	32
118	31
171	54
159	40

b. What is the correlation?

$$r = .6980$$

c. What is the coefficient of determination?

$$r^2 = .487$$

d. What percent of the change in talk time can be explained by the change in age?

$$48.7\%$$