A random sample of eight quarterback listed in *The Sports*

 *Encyclopedia: Pro Football,* gave the following information.

Let x = height of a quarterback in inches, and let y = weight

 of a quarterback in pounds.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | 75 | 78 | 74 | 73 | 72 | 75 | 76 | 73 |
| y | 205 | 230 | 210 | 210 | 195 | 215 | 203 | 196 |

1. Draw a scatter plot.
2. Calculate the correlation coefficient
3. Make a conclusion based upon the correlation coefficient.
4. Calculate the equation of the regression line and draw the line in your scatter plot.
5. If a quarterback is x = 76 inches tall, what can you predict is the weight of this quarterback?
6. Calculate the coefficient of determination.
7. Interpret the coefficient of determination in terms of your data.
8. Calculate the stand error of the estimate.
9. Interpret the standard error of the estimate in terms of your data.
10. Construct a 95% prediction interval for the weight of the quarterback when the height is 70 inches and interpret the results.

For a given population of high school seniors, the Scholastic Aptitude Test

 (SAT) in mathematics has a mean score of 500 with a standard deviation

 of 100. Another test widely used is American College Test ACT) exam.

 The mathematics portion of the ACT has a mean of 18 and a standard

 deviation of 6. Both SAT and ACT scores are normally distributed. What

 is the probability that a randomly selected high school senior’s score on

 the mathematics part of the SAT will be (**12 points)**

a) more than 675 ?

b) less than 450 ?

c) between 450 and 675 ?

 What is the probability that a randomly selected high school senior’s score

 on the mathematics’ part of the ACT will be

d) more than 28 ?

e) more than 12 ?

f) between 12 and 28 ?