



# Contest Quiz 2

## Question Sheet

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In this quiz we will be looking at the relation of height and weight and the effect of education and physical characteristics on earnings.

Load the educational attainments and earnings functions data set into EViews from the url:

<http://thiloklein.de/R/eaef>

NOTE: Use the full data set unless stated otherwise. Please round your results to two decimal places. Do not round any interim results.

EXAMPLE: If your unrounded solution is 0.13897439, drop all decimal places except the first three. This leaves you with 0.138. If the third decimal place is 5 or above (as is the case here), round up. This gives 0.14.

### Question 1

Inspect the data, and answer the following:

- I) What is the range of the dataset?  
(a) 9 (b) 78 (c) 453 (d) 540
- II) What is the height of the person with ID number 491.  
(a) 63 (b) 65 (c) 67 (d) 72
- III) What is the height of the tallest individual?  
(a) 69 (b) 72 (c) 77 (d) 80
- IV) What is the weight of the thinnest individuals?  
(a) 87 (b) 108 (c) 125 (d) 140

### Question 2

Look at proportions and percentages of the variables weight, height.

- I) What is the percentage of individuals with weight equal to 151 (rounded to 2 decimal places)?  
(a) 0.0013% (b) 0.0019% (c) 0.12% (d) 0.19%
- II) What is the proportion of individuals with height higher than 68?  
(a) 65/540 (b) 87/540 (c) 217/540 (d) 262/540
- III) What is the proportion of individuals with height higher than 68 and weight less than 150?  
(a) 29/540 (b) 39/540 (c) 49/540 (d) 62/540

### Question 3

Now produce summary statistics for the weight and height variable.

- I) What is the mean height, to 2 decimal places?  
(a) 67.43 (b) 69.58 (c) 70.14 (d) 71.56
- II) What is the median value of weight.  
(a) 140.00 (b) 144.00 (c) 150.00 (d) 154.00
- III) Determine the 67.5% quartile of variable height.  
(a) 67.00 (b) 69.00 (c) 70.00 (d) 74.00
- IV) Determine the interquartile range of variable height.  
(a) 2.00 (b) 7.00 (c) 8.00 (d) 9.00

### Question 4

Produce a histogram of weight.

- I) What is the shape of the histogram?  
(a) symmetric (b) negatively skewed (c) positively skewed
- II) What is the skewness?  
(a) -0.89 (b) -0.81 (c) 0.84 (d) 0.92
- III) What is the kurtosis?  
(a) 1.98 (b) 2.47 (c) 2.83 (d) 3.99
- IV) Which of the following relationship is true for a right skewed distribution?  
(a) Mean=Median=Mode (b) Mean < Median < Mode (c) Mean > Median > Mode (d) Mean > Mode > Median
- V) Which of the following distribution is symmetric?  
(a) Student's t-distribution (b) Gamma distribution (c) Beta Distribution (d) Poisson distribution

### Question 5

We will now explore the relationship between weight and height; earnings and schooling .

- I) What is the covariance between height and weight?  
(a) 1.87 (b) 16.37 (c) 91.07 (d) 1169.02
- II) What is the correlation between height and weight? (rounded to 2 decimal places)  
(a) -0.18 (b) -0.33 (c) 0.33 (d) 0.66
- III) Which of the following statements is true?
  - a) Earnings and Schooling are strongly negatively correlated, if schooling is high, earnings are highly likely to be low
  - b) Earnings and schooling are moderate negatively correlated, if schooling is high, earnings are somewhat likely to be low
  - c) Earnings and schooling are strongly positively correlated, if schooling is high, earnings are highly likely to be high
  - d) Earnings and schooling are moderate positively correlated, if schooling is high, earnings are somewhat likely to be high

## Question 6

Explore the relationship between earnings and level of education.

- I) What is the probability of earning between 0 and 50k? (rounded to 2 decimal places)  
(a) 0.93 (b) 0.96 (c) 0.98 (d) None of the above
- II) What is the probability that an individual is less than 38 years old and his/her income lies in the 0-50 band (rounded to 2 decimal places)  
(a) 0.06 (b) 0.19 (c) 0.20 (d) 0.33
- III) Given that an individual had at least 15 years of education, what is the probability he/she earns less than 50k?(rounded to 2 decimal places)  
(a) 0.12 (b) 0.30 (c) 0.65 (d) 0.91