

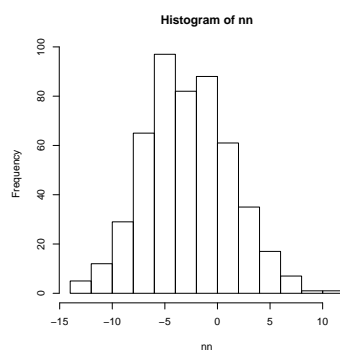
Medical Faculty - Undergraduates - Exam of Biostatistics

31.7.2013

Name:	ID Number:	Points:	Exam831
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- 1 [5] Which of the following is a measure of central tendency?
- (a) mean
 - (b) range
 - (c) variance
 - (d) standard deviation
 - (e) coefficient of correlation
 - (f) mode
 - (g) median
 - (h) frequency
- 2 [15] A genetically modified mouse does not survive the first month of life with probability 0.40.
- (a) We planned an experiment that included 10 mice. What is the probability that after a month not more than a mouse will survive?
 - (b) What is the expected number of mice still alive after the first month?

- 3 [15] Data for variable nn are represented graphically.



- (a) Is standard deviation 1, 2 or 4?
 - (b) Is mean -3, 0 or 3?
- 4 [15] What is the probability of obtaining exactly 1 tails if we toss a fair coin 2 times?

Good luck!

Medical Faculty - Undergraduates - Exam of Biostatistics

31.7.2013

Name:	ID Number:	Points:	Exam152
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- 1 [5] Which of the following is a measure of central tendency?
- (a) median
 - (b) variance
 - (c) mode
 - (d) coefficient of correlation
 - (e) frequency
 - (f) range
 - (g) standard deviation
 - (h) mean
- 2 [15] A genetically modified mouse does not survive the first month of life with probability 0.40.
- (a) We planned an experiment that included 10 mice. What is the probability that after a month not more than a mouse will survive?
 - (b) What is the expected number of mice still alive after the first month?
- 3 [5] The median value of the following data 33, 3, 7, 15, 107, 1, 41 is
- (a) 29.6
 - (b) cannot be calculated
 - (c) 15
 - (d) 16
- 4 [10] Calculate the mean of the following data: 3,-1,7,6
- (a) 3.75
 - (b) 4.75
 - (c) does not exist
 - (d) 4.5
- 5 [15] What is the probability of obtaining exactly 1 tails if we toss a fair coin 10 times?

Good luck!

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Name:	ID Number:	Points:	Exam831
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1 [5] Which of the following is a measure of central tendency?

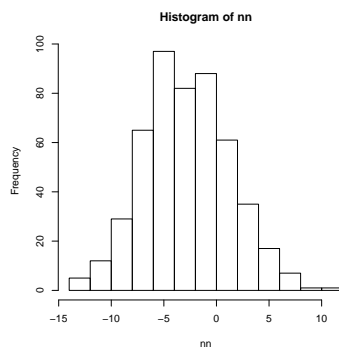
- (a) mean **T**
- (b) range **F**
- (c) variance **F**
- (d) standard deviation **F**
- (e) coefficient of correlation **F**
- (f) mode **T**
- (g) median **T**
- (h) frequency **F**

2 [15] A genetically modified mouse does not survive the first month of life with probability 0.40.

- (a) We planned an experiment that included 10 mice. What is the probability that after a month not more than a mouse will survive? $X = 1$ **survive**, $P(X = 1) = p = .6$, $Y = \text{sum}(X)$, $P(Y \leq 1) = P(Y = 0) + P(Y = 1) = (1 - p)^{10} + 10 * p(1 - p)^9 \rightarrow P(Y \leq 1) = 0.0017$

- (b) What is the expected number of mice still alive after the first month? $E(X) = pn \rightarrow E(X) = 6$

3 [15] Data for variable nn are represented graphically.



- (a) Is standard deviation 1, 2 or 4? **4**
- (b) Is mean -3, 0 or 3? **-3**

4 [15] What is the probability of obtaining exactly 1 tails if we toss a fair coin 2 times?

Number of trials: n=2, Number of successes=k=1, probability of success: p=0.5. Using binomial distribution: $P(X = k|n, p) = 0.75$.

Medical Faculty - Undergraduates - Exam of Biostatistics

31.7.2013

Name:	ID Number:	Points:	Exam152
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- 1 [5] Which of the following is a measure of central tendency?
- (a) median **T**
 - (b) variance **F**
 - (c) mode **T**
 - (d) coefficient of correlation **F**
 - (e) frequency **F**
 - (f) range **F**
 - (g) standard deviation **F**
 - (h) mean **T**
- 2 [15] A genetically modified mouse does not survive the first month of life with probability 0.40.
- (a) We planned an experiment that included 10 mice. What is the probability that after a month not more than a mouse will survive? $X = 1$ **survive**, $P(X = 1) = p = .6$, $Y = \text{sum}(X)$, $P(Y \leq 1) = P(Y = 0) + P(Y = 1) = (1 - p)^{10} + 10 * p(1 - p)^9 \rightarrow P(Y \leq 1) = 0.0017$
 - (b) What is the expected number of mice still alive after the first month? $E(X) = pn \rightarrow E(X) = 6$
- 3 [5] The median value of the following data 33, 3, 7, 15, 107, 1, 41 is
- (a) 29.6 **F**
 - (b) cannot be calculated **F**
 - (c) 15 **T**
 - (d) 16 **F**
- 4 [10] Calculate the mean of the following data: 3,-1,7,6
- (a) 3.75 **T**
 - (b) 4.75 **F**
 - (c) does not exist **F**
 - (d) 4.5 **F**
- 5 [15] What is the probability of obtaining exactly 1 tails if we toss a fair coin 10 times?
- Number of trials: n=10, Number of successes=k=1, probability of success: p=0.5. Using binomial distribution: $P(X = k|n, p) = 0.0107$.**