Medical Faculty - Undergraduates - Exam of Biostatistics

31.7.2013

Name:	ID Number:	Points:	Exam152

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,** $P(X = 1) = p = .6, Y = sum(X), P(Y <= 1) = P(Y = 0) + P(Y = 1) = (1-p)^1 0 + 10 * p(1-p)^9$ **->** $P(Y <= 1) = 0.0017$

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

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.**