

Name:

Statistics

Date:

Practice Quiz 4-C

1. Joah tests Nate's psychic abilities by having him guess 6 Zener cards.

a) Make a probability distribution histogram, with axis labels and a title, showing the probability of Nate guessing 0, 1, 2, 3, 4, 5, or 6 cards correctly. Round every probability to exactly three decimal places.

b) Calculate the mean and standard deviation of the distribution.

c) Nate correctly predicts 4 of the 6 rolls. Add the appropriate values from the probability distribution to calculate the likelihood of someone doing as well or better than this.

d) Check your answer to (c) by using a `binom` function on the calculator. Write exactly what you type.

e) If the answer to (c) and (d) is less than 5%, write "Reject the null hypothesis. Our data indicate that Nate is psychic." If not, write "Do not reject the null hypothesis. Our data do not indicate that Nate is psychic."

f) Use the formula $z = \frac{r - \mu}{\sigma}$ to calculate the number of standard deviations Nate's score is above average.