Stimulus

Prompt 1

As a sales manager you analyze the sales record for all sales persons under your guidance. Joan averages 10 calls per day and is successful selling the product 75% of the time. Margo averages 16 calls per day and is successful selling the product 45% of the time.

Using BINOM.DIST

1. $p = 0.75$ $n = 10$ $p(x = 6)$
2. $p = 0.45$ $n = 16$ $p(x = 6)$
3. $p = 0.75$ $n = 10$ $p(x > 6)$
4. $p = 0.45$ $n = 16$ $p(x > 6)$
5. Although Margo's "success" rate is lower, she makes more calls than Jane and as a result, her probability of making a number of sales is higher than Joan.

1 Numeric 1 point

What is the probability that Joan makes exactly 6 sales on any given day?

0.1460

2 Numeric 1 point

What is the probability that Margo makes exactly 6 sales on any given day?

0.1684

3 Numeric 1 point

What is the probability that Margo makes more than 6 sales on any given day?

0.6340

4 Numeric 1 point

What is the probability that Joan makes more than 6 sales on any given day?

0.7759

5 Essay 3 points

Take a look at the worksheet with all the probabilities calculated (not just the ones in previous questions). Looking over each worker's probabilities for making sales (based on the provided parameters) and comparing that to number of calls placed.
What can you say about the productivity of each of these employees?

Edit View Insert Format Tools Table

12pt Paragraph

Stimulus

* The question asks us for Not effective so $p = 0.05$ Not 0.95

Prompt 2

A vaccine has been found to be 95 percent effective.

6. $p = 0.05$ $n = 20$ BINOM.DIST $p(x = 1)$

6 Numeric 4 points

Using excel, what is the probability that it is not effective for 1 and only 1 individual out of 20 individuals?

0.3774

Stimulus

Prompt 3

It is assumed that cars arriving at coffee shop drive-thru follow a poisson process and arrive at the rate of two per minute during morning hours (8 am – 11 am).

7. Using poisson.dist

$\mu = 2$ $P(X > 2)$

USING:

$1 - P(x \leq 1)$

8. The mean number (or expected number) of customers is 360, so yes 400 would be enough if we assume each car only buys one cup of coffee.

7 Numeric 3 points

Using excel, what is the probability that more than two motorists will arrive at the coffee shop during a one-minute interval in the morning?

0.3233

8 Essay 4 points

You have decided to stock the store with 400 coffee cups for a 3-hour morning shift. Would this be enough to meet the demand of your customers? Explain.
You are welcomed to use whatever assumptions you want in your response.

Edit View Insert Format Tools Table

12pt Paragraph

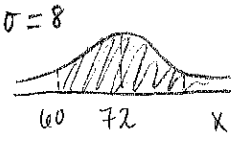
Stimulus

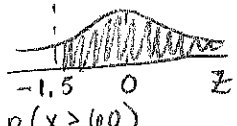
Normal Distribution Video

Instructions
Please watch the normal distribution video to answer these questions.

These questions pertain to the problem shown at the end of the normal distribution asynchronous video.

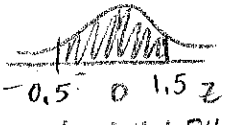
9. $\sigma = 8$





$P(x > 60)$

10. $\sigma = 8$



$P(68 > x < 84)$

9 Numeric 1 point

What is the probability that a randomly selected manager will score above 60?

0.9332

10 Numeric 1 point

What is the probability that a randomly selected manager will score between 68 and 84?

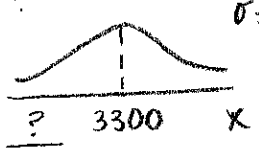
0.6247

Stimulus

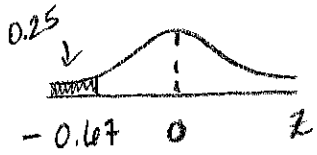
Prompt 4

It is known that mean yearly healthcare costs for a family of four are normally distributed with a mean of $3,300 and a standard deviation of $500. The insurance company has offered to offer reductions in healthcare premiums if the health expenses for a family do not exceed a certain amount per year.

NORMAL!



$\sigma = 500$



11 Numeric 3 points

What should the highest expense amount that is eligible for the premium reduction be set to if company wants to offer the reduction to those families that have the lowest 25 percent of yearly expenses?

2,962

1st: We find the value of Z that corresponds to a probability of 0.25 (looking inside table) the number is -0.67

2nd: Now we solve for the x-value using our formula $z = \frac{x - \mu}{\sigma} = -0.67 = \frac{x - 3300}{500}$