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Assignment 5 - Facebook Ads Policy

Instructions

1. Answer the below question in the boxes provided.
2. Please submit the assignment through TalentLabs Learning System.

Scenario

Imagine you are working in Facebook and you are debating with your team on which of the following 2 facebook algorithms that you should apply to instagram stories.

1. Out of every 50 stories, one will be an ad
2. Every story has an 8% chance of being an ad.

To resolve the issue, you and the team are going to do some calculations.

Question 1 (2 points)
For algorithm 1, what is the expected number of ads that people would see, for every 100 stories?
(You should include the calculation steps and method in the answer, instead of just the final answer)

Out of every 50 stories, one will be an ad 100/50 = 2 For every 100 stories, 2 will be an ad.

Question 2 (2 points)
For algorithm 2, what is the expected number of ads that people would see, for every 100 stories?
(You should include the calculation steps and method in the answer, instead of just the final answer)

Every story has an 8% chance of being an ad. 100 x 8% = 8 For every 100 stories, 8 will be an ad.

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Question 3 (3 points)

What is the probability of seeing less than or exactly 2 ads, for every 100 stories if we are going to adopt algorithm 2?

(You should include the calculation steps and method in the answer, instead of just the final answer)

Every story has an 8% chance of being an ad.

$P(X \leq 2) = P(X=0) + P(X=1) + P(X=2)$

$P(X=0) = 100C0(8\%)^{0}(1-8\%)^{100-0} = 0.0002392118747$
$P(X=1) = 100C1(8\%)^{1}(1-8\%)^{100-1} = 0.002080103258$
$P(X=2) = 100C2(8\%)^{2}(1-8\%)^{100-2} = 0.008953487936$

$P(X \leq 2) = 0.01127$

Question 4 (2 points)

What is the probability of seeing more than 2 ads, for every 100 stories if we are going to adopt algorithm 2?

(You should include the calculation steps and method in the answer, instead of just the final answer)

Every story has an 8% chance of being an ad.

$P(X > 2) = 1 - P(X \leq 2)$
$= 1 - 0.01127$
$= 0.98873$

Question 5 (1 point)

From a user perspective, which algorithm would you prefer? Why?

Algorithm 1 because probability of a user seeing an ad is less than algorithm 2

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Question 6 (1 point)

From Facebook's management team perspective, which algorithm would you prefer? Why?

Algorithm 2 because probability of a user seeing an ad is more than algorithm 1