

12.1 Chi-Square Goodness of Fit Test

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The screenshot shows a statistics quiz interface. At the top, the title "12.1 Chi-square goodness of fit test" is visible. Below the title, the instructor's name "Michael Brodskiy" and the date "March 25, 2022" are displayed. The quiz interface includes a sidebar with a list of 17 questions, each with a progress indicator (e.g., "100% Correct"). The main area displays "Question 1 of 17". The question text reads: "A company claims that each batch of its deluxe mixed nuts contains 52% cashews, 27% almonds, 13% macadamia nuts, and 8% Brazil nuts. To test this claim, a quality-control inspector takes a random sample of 150 nuts from the latest batch. The table displays the sample data." Below the text is a table with the following data:

Type of nut	Cashew	Almond	Macadamia	Brazil
Count	83	29	20	18

Which are appropriate hypotheses for performing a test of the company's claim?

- ☐ $H_0 : p_{\text{cashew}} = 78, p_{\text{almond}} = 40.5, p_{\text{macadamia}} = 19.5, p_{\text{brazil}} = 12$
 H_a : at least two of the p_i 's are incorrect
- ☐ H_0 : Each type of nut is equally likely to appear
 H_a : Each type of nut is not equally likely to appear
- ☐ $H_0 : p_{\text{cashew}} = 83, p_{\text{almond}} = 29, p_{\text{macadamia}} = 20, p_{\text{brazil}} = 18$
 H_a : at least two of the p_i 's are incorrect
- ☒ $H_0 : p_{\text{cashew}} = 0.52, p_{\text{almond}} = 0.27, p_{\text{macadamia}} = 0.13, p_{\text{brazil}} = 0.08$
 H_a : at least two of the p_i 's are incorrect

The interface also shows a "Solved" status at the bottom of the question area.