

9.3 Tests About a Difference in Proportions

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The screenshot shows a statistics assignment interface. At the top, there's a navigation bar with a bell icon, a dropdown menu showing "9.3 Tests about a difference in proportions", and a user profile icon for "Michael Brodskiy". Below this, a breadcrumb trail reads: "Statistics AP-Thompson-Year-12462 (66479) > Activities and Due Dates > 9.3 Tests about a difference in proportions".

The main content area is titled "1 of 18 Questions" and shows an "Assignment Score: 97.9%". On the left, a list of questions is shown with their respective scores: Question 1 (100%, Correct), Question 2 (99%, Correct), Question 3 (100%, Correct), Question 4 (100%, Correct), Question 5 (100%, Correct), Question 6 (100%, Correct), Question 7 (100%, Correct), Question 8 (80%, Correct), and Question 9 (100%, Correct). The first question is selected.

The question text reads: "Many new products introduced into the market are targeted toward children. The choice behavior of children with regard to new products is of particular interest to companies that design marketing strategies for these products. As part of one study, randomly selected children in different age groups were compared on their ability to sort new products into the correct product category (milk or juice). Given in the table are some of the data. Researchers want to know if a greater proportion of 6- to 7-year-olds can sort correctly than 4- to 5-year-olds."

The data table is as follows:

Age group	n	Number who sorted correctly
4- to 5-year-olds	50	10
6- to 7-year-olds	53	28

Below the table, the question asks: "State appropriate hypotheses for performing a significance test. Be sure to define the parameters of interest."

The answer options are: ☐ $H_0 : p_1 - p_2 = 0, H_a : p_1 - p_2 > 0$ where p_1 = the true proportion of 4- to 5-year-olds who would sort correctly and p_2 = the true proportion of 6- to 7-year-olds who would sort correctly.

At the bottom of the question area, there is a green bar with a checkmark and the word "Solved".