

Name:

Date:

Period:

AP Statistics

AP Test Prep: Problem #1: Home Sales 2006 #1B

RNB-KEY

A large regional real estate company keeps records of home sales for each of its sales agents. Each month, the company publishes the sales volume for each agent. Monthly sales volume is defined as the total sales price of all homes sold by the agent during a month. The figure below displays the cumulative relative frequency plot of the most recent monthly sales volume (in hundreds of thousands of dollars) for these agents.



a) In the context of this question, explain what information is conveyed by the **circled point**.

This point indicates that 40 percent of the sales agents at this real estate company had sales volume of \$300,000 or less in the month shown.

b) What proportion of sales agents achieved monthly sales volumes between \$700,000 and \$800,000?

Eighty percent of the sales agents had sales volume of \$800,000 or less and 70 percent of the sales agents had sales volume of \$700,000 or less. Thus, $0.8 - 0.7 = 0.10$ or 10 percent of the sales agents achieved monthly sales volumes greater than \$700,000 and not exceeding \$800,000.

c) For values between 10 and 11 on the horizontal axis, the cumulative relative frequency plot is flat. In the context of this question, explain what this means.

There were no agents whose monthly sales volume was between \$1,000,000 and \$1,100,000.

d) A bonus is to be given to 20 percent of the sales agents. Those who achieved the highest monthly sales volume during the preceding month will receive a bonus. What is the minimum monthly sales volume an agent must have achieved to qualify for the bonus?

The 80th percentile for the distribution of monthly sales volume by these agents during the preceding month is \$800,000. Therefore, an agent making more than \$800,000 will be in the top 20 percent.

AP Statistics**AP Test Prep: Problem #1: Home Sales****20**

Directions: Show all your work. Indicate clearly the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

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