

**Question 1**

A coin is tossed 5 times. Find the probability of getting at least 1 tail.

**Question 2**

If 40% of all commuters ride to work in carpools, find the probability that if 8 workers are selected, 5 will ride in carpools.

**Question 3**

The average number of calories in a 1.5-ounce chocolate bar is 225. Suppose that the distribution of calories is approximately normal with standard deviation is 10. Find the probability that a randomly selected chocolate bar will have between 200 and 220 calories.

**Question 4**

A researcher reports that the average salary of assistant professors is more than \$42,000. A sample of 30 assistant professors has a mean salary of \$43,260. At  $\alpha = 0.05$ , test the claim that assistant professors earn more than \$42,000 per year. The standard deviation of the population is \$5230.

**Question 5**

A survey of 30 adults found that the mean age of a person's primary vehicle is 5.6 years. Assuming the standard deviation of the population is 0.8 year, find the best point estimate of the population mean and the 99% confidence interval of the population mean.

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