The Gallup Poll periodically asks a random sample of U.S. adults whether they think economic conditions are getting better, getting worse, or staying about the same. When they polled 2976 respondents in March of 2010, only 1012 thought economic conditions in the United States were getting better. (*Source: Business Statistics by Sharpe, De Veaux, and Velleman*)

Questions:

1. Define the parameter of interest, π.

2. Find the sample statistic, $\hat{\pi}$ (note that we call this the point estimate of π).

3. Explain what is wrong with the following interpretation of $\hat{\pi}$: "34% of *all* U.S. adults thought the economy was improving."

4. Find the standard error of the point estimate.

5. Find the margin of error for this poll.

6. Find a 95% confidence interval for π using the Wald method (we call this the interval estimate of π).

7. Explain what is wrong with the following interpretation of the confidence interval: "Between 32% and 36% of all U.S. adults thought the economy was improving."

8. Explain what is wrong with the following interpretation of the confidence interval: "We are 95% certain that between 32% and 36% of the adults that were surveyed thought the economy was improving."

9. Give a correct interpretation of this confidence interval.