Name _____   Date _____ Per. _____
AP Statistics

Interpretation of Confidence Intervals and Levels

From a sleep lab experiment, a 95% confidence interval for the mean number of hours
that adults sleep at night is found to be (6.55,8.25). Identify which of the following are
correct interpretations of **this confidence interval**, which are correct interpretations of
the **confidence level,** and which are incorrect statements? ***If the statement is not correct,
explain why.***

1. 95% of the time, the number of hours people sleep is between 6.55 hours and 8.25
   hours.

2. 95% of the confidence intervals constructed by this method will contain the mean
   number of hours that adults sleep at night.

3. We are 95% confident that the mean number of hours that adults sleep at night is
   between 6.55 hours and 8.25 hours.

4. We are 95% confident that the mean number of hours that adults sleep at night is 7.4
   $\pm$ .85.

5. 95% of the confidence intervals we construct will give us the interval (6.55,8.25).

6. There is 95% probability that the mean number of hours that adults sleep is between 6.55 and 8.25 hours.

7. If 100 random samples of the given size are picked and a 95% confidence interval is calculated from each, then the mean number of hours that adults sleep will be in approximately 95 of the resulting intervals.

8. We are 95% certain that the number of hours that adults sleep is 7.4 hours, with a margin of error of .85 hour.

9. This 95% confidence interval is an interval computed from sample data by a method that has a 95% probability of producing an interval containing the true number of hours that adults sleep.

10. This confidence interval consists of values determined from sample information. Associated with the interval is a 95% level, which measures one's confidence that the number of hours that adults sleep lies within 6.55 hours and 8.25 hours.