Solutions to the worksheet on confidence intervals (3/18)

A. $z = 1.96$

B. $1.96\left(\frac{2}{10}\right)$

C. 95% CI $(7.375203, 8.159203)$.

D. The expression $P(7.375203 < \mu < 8.159203) = 0.95$ doesn't make sense because there's nothing random in it. There's no random variable, no experiment, no event being described. It doesn't make sense as an expression of probability. I happen to know that $\mu = 8$, and substituting that into the expression gives $P(7.375203 < 8 < 8.159203) = 0.95$. This really doesn't make sense: 8 is certainly between those two numbers.

E. The interval was generated by a method that produces an interval containing the true mean μ 95% of the time. Since $\mu = 8$, this is one of the times it worked. Generally you won't know μ, though.

1. 95% CI: $209.46 \pm 1.96(16.62)$ $(176.89, 242.03)$
   99% CI: $209.46 \pm 2.5758(16.62)$ $(166.65, 252.27)$