I have a simple expo decay problem; here it is as presented in the text
At a sugar refinery the process of inversion of raw sugar refinery can be modeled as exponential decay
in this way

$$(S = S_0 e^{-kt})$$

since the rate of inversion decrewases as the amount of raw
sugar remaining decreases.

So, Q.1: If, after 4 hours, 500kg of raw sugar has been refined to 380kg,
how much sugar remains after 10 hours?
Q2. How long would the process take to reduce
the 500kg to the required level of 40% of the original?
Q3. What would the sketch of such a curve look like?

My attempts so far:
Q1. Start by solving for "k"
$380 = 500e^{-4k} \Rightarrow \frac{38}{50} = e^{-4k}$
Taking logs of BSides:
$ln\frac{38}{50} = -4k$

$\therefore k = \frac{ln\frac{38}{50}}{-4} \approx 0.069$

That was really all i needed checking thanks folks
because for some reason, while I think my calculations are correct,
they are conflicting with the rest of the given answers.