Serial dilution homework

Serial Dilution Homework

1. In the image above, the final dilution is: _____.

2. You make six 2-fold serial dilutions of a solution. Your final dilution will be: _____.

3. You dilute 1 ml of an unknown sample of bacteria to 1×10^{-6} and plate out 100? l onto a Petri dish. The next day you count 64 colonies. The number of viable bacteria in the original sample was:

- a. 6. 4×10^{7} cells/ml
- b. 6. 4×10^{8} cells/ml
- c. 6. 4×10^{9} cells/ml
- d. 6. 4×10^{10} cells/ml

4. A 1 ml sample of bacteria was diluted to 10^{-6} and 100? l was plated on the Petri dish at right. What was the approximate concentration of the original sample? 8×10^{7} bacteria per mL.

5. What are two reasons serial dilution is a useful technique for counting populations of bacteria?

- a). When there are a lot of bacteria, it is hard to count undiluted colonies accurately because there could be hundreds of them. Serial dilution is a useful technique because the colonies are counted twice with different people and the average number of colonies is reported as the number of bacteria present in the sample after multiplying the dilution factor.

- b). If the number of bacteria in the samples is high, colonies of bacteria are likely to cover the whole plate so that one cannot count any colonies at all.

- b). If the number of bacteria in the samples is high, colonies of bacteria