

GENERAL BIOLOGY
Work Sheet for Dilutions Lab

Using a stock solution of 10% dextrose prepare 10 mls. of 5% solution. To do so we multiply the concentration (5%) needed by the quantity (10 mls) needed and divide by the concentration of the initial stock solution (10%) so:

$$\frac{(\% \text{ needed}) \times (\text{mls. needed})}{(\% \text{ of stock})}$$

In this case it would read as:

$$\frac{(5\%) \times (10 \text{ mls.})}{10\%} = \frac{.05 \times 10 \text{ mls}}{.10} = 5 \text{ mls stock needed}$$

Given a stock solution of 2% dextrose, prepare 10 mls of the following dilutions:

0.1% dextrose solution

1.0% dextrose solution

0.5% dextrose solution

Given a stock solution of 5% sodium chloride, prepare 20 mls of the following dilutions:

2.0% solution

0.5% solution

3.0% solution

Given a stock solution of 10% dextrose, make a serial dilution of 5 mls of the following:

0.9% solution

0.5% solution

0.004% solution

Check your math before looking at the answers, simple mathematical errors are usually the cause of incorrect answers.

Part 1 0.5 mls stock + 9.5 mls water = 0.1% solution
 5 mls stock + 5 mls water = 1.0% solution
 2.5 mls stock + 7.5 mls water = 0.5% solution

Part 2 8 mls stock + 12 mls = 2.0 solution
 2 mls stock + 18 mls = 0.5 solution
 12 mls stock + 8 mls = 3.0% solution

Part 3 .45 mls stock + 4.55 mls water = 0.9% solution
 2.78 mls of 0.9% stock + 2.22 mls water = 0.5% solution
 .22 mls of 0.5% stock + 4.978 mls water = .004% solution