

Dilutions Lab Activity

Name(s): Key
Date:
Block:

1. Calculate the amount of 10.0 M solution needed to make 100.0 mL each of the following concentrations:

a) 5.00 M

$$C_1 = 10.0 \text{ M}$$

$$V_1 = ?$$

$$C_2 = 5.00 \text{ M}$$

$$V_2 = 100.0 \text{ mL}$$

$$C_1 V_1 = C_2 V_2$$

$$10.0 V_1 = (5.00)(100.0)$$

$$V_1 = 50.0 \text{ mL}$$

b) 3.50 M

$$C_1 V_1 = C_2 V_2$$

$$(10.0) V_1 = (3.50)(100.0)$$

$$V_1 = 35.0 \text{ mL}$$

c) 2.50 M

$$C_1 V_1 = C_2 V_2$$

$$(10.0) V_1 = (2.50)(100.0)$$

$$V_1 = 25.0 \text{ mL}$$

d) 2.00 M

$$C_1 V_1 = C_2 V_2$$

$$(10.0) V_1 = (2.00)(100.0)$$

$$V_1 = 20.0 \text{ mL}$$

e) 1.00 M

$$C_1 V_1 = C_2 V_2$$

$$(10.0) V_1 = (1.00)(100.0)$$

$$V_1 = 10.0 \text{ mL}$$

2. Given the following equipment, design a detailed procedure for the preparation of the solutions in #1

- 2x medium beakers
- 100. mL volumetric flask
- Squeeze bottle
- 5x 125 mL Erlenmeyer flasks
- 10.0 mL pipette • Funnel
- 25.0 mL pipette
- Suction bulb
- Rubber stopper

- ① Clean + dry all glasswear
- ② Label all glass wear.
- ③ Obtain 10.0M stock solution in a beaker (~100mL)
- ④ Pour water into small beaker. Clean pipette with water
- ⑤ Pour ~50mL of stock solution into small beaker. Clean pipette with solution.
- ⑥ Measure volume of stock solution using pipette, and pour into erlenmeyer flask.
- ⑦ Transfer solution from erlenmeyer flask into volumetric flask using funnel.
- ⑧ Use wash bottle in erlenmeyer flask to rinse out all solution residue. Mix solution
- ⑨ Use beaker to fill volumetric flask
- ⑩ Use wash bottle to top off. Mix solution.
- ⑪ When ready, get both solutions checked off!

3. Submit your procedure to the teacher for approval.

Teacher Initials:
(procedure)

1st try 2nd try 3rd try

4. Follow your procedure and prepare the solutions you were assigned

Teacher Initials:
(solutions)

1st try 2nd try 3rd try

5. Show the teacher your prepared solutions.