

What volume of a 6.0 M NaCl stock is needed to make 100 mL of a 1.5 M solution?

You want 75 mL of a 0.5 M KNO_3 solution. How much 2.0 M stock should you use?

To make 250 mL of 0.8 M HCl from a 4.0 M stock, how much stock is needed?

How much 5.0 M sugar solution is required to make 60 mL of a 1.0 M solution?

You need 1.0 M from a 3.0 M solution. How much of the stock is required to make 90 mL?

Prepare 400 mL of a 0.2 M Na_2SO_4 solution using a 2.0 M stock. What volume is needed?

What volume of a 6.0 M NaCl stock is needed to make 100 mL of a 1.5 M solution?

$$C_1 V_1 = C_2 V_2$$

$$[6.0\text{M}] V_1 = [1.5\text{M}] [100\text{mL}]$$

$$V_1 = \frac{(\cancel{1.5\text{M}})(100\text{mL})}{\cancel{6.0\text{M}}}$$

$$V_1 = 25\text{ mL}$$

$$V_1 = 30\text{ mL}$$

You want 75 mL of a 0.5 M KNO_3 solution. How much 2.0 M stock should you use?

$$C_1 V_1 = C_2 V_2$$

$$[2.0 \text{ M}] V_1 = [0.5 \text{ M}] [75 \text{ mL}]$$

$$V_1 = \frac{(0.5 \text{ M})(75 \text{ mL})}{2.0 \text{ M}}$$

$$V_1 = 18.75 \text{ mL}$$

$$V_1 = 20 \text{ mL}$$

To make 250 mL of 0.8 M HCl from a 4.0 M stock, how much stock is needed?

$$C_1 V_1 = C_2 V_2$$

$$[4.0\text{M}] V_1 = [0.8\text{M}] [250\text{mL}]$$

$$V_1 = \frac{(\cancel{0.8\text{M}})(250\text{mL})}{\cancel{4.0\text{M}}}$$

$$V_1 = 50\text{mL}$$

$$V_1 = 50\text{mL}$$

How much 5.0 M sugar solution is required to make 60 mL of a 1.0 M solution?

$$C_1 V_1 = C_2 V_2$$

$$[5.0M] V_1 = [1.0M][60mL]$$

$$V_1 = \frac{(1.0M)(60mL)}{5.0M}$$

$$V_1 = 12 \text{ mL}$$

$$V_1 = 10 \text{ mL}$$

You need 1.0 M from a 3.0 M solution. How much of the stock is required to make 90 mL?

$$C_1 V_1 = C_2 V_2$$

$$[3.0\text{M}] V_1 = [1.0\text{M}][90\text{mL}]$$

$$V_1 = \frac{(1.0\text{M})(90\text{mL})}{3.0\text{M}}$$

$$V_1 = 30\text{mL}$$

$$V_1 = 30\text{mL}$$

Prepare 400 mL of a 0.2 M Na_2SO_4 solution using a 2.0 M stock. What volume is needed?

$$C_1 V_1 = C_2 V_2$$

$$[2.0\text{M}] V_1 = [0.2\text{M}] [400\text{mL}]$$

$$V_1 = \frac{(\cancel{0.2\text{M}})(400\text{mL})}{\cancel{2.0\text{M}}}$$

$$V_1 = 40\text{mL}$$

$$V_1 = 40\text{mL}$$