How would you prepare a total volume of 40 mL of a 3:2 solution containing water:alcohol.

Prepare 60 mL of a 3:2 water:alcohol solution.

Prepare a 3:2 water:alcohol solution using 27 mL of water.

Prepare a 3:2 water:alcohol solution using 48 mL of alcohol.

How would you prepare a 3:2 water:alcohol solution using 0.15 L of alcohol?

How would you prepare a total volume of 25 mL of a 3:1:2 solution containing oil:vinegar:water.

Prepare 80 mL of a 2:1:1 oil:vinegar:water solution.

Prepare a 2:1:1 oil:vinegar:water solution given 50 mL of oil.

Prepare a 2:1:1 oil:vinegar:water solution given 25 mL of vinegar.

How would you prepare a 2:1:1 oil:vinegar:water solution using 0.25 L of oil?

How would you prepare a total volume of 40 mL of a 3:2 solution containing water:alcohol.

$$\text{total parts} = 3 + 2 = 5 \text{ parts}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{3 \text{ parts}}{5 \text{ parts}} = \frac{\forall_{water}}{40 \text{ mL}}$$

$$\forall_{water} = \frac{(3 \text{ parts})(40 \text{ mL})}{5 \text{ parts}} = 24 \text{ mL}$$

$$\boxed{\forall_{water} = 20 \text{ mL}}$$

$$C_{alcohol} = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{5 \text{ parts}} = \frac{\forall_{alcohol}}{40 \text{ mL}}$$

$$\forall_{alcohol} = \frac{(2 \text{ parts})(40 \text{ mL})}{5 \text{ parts}} = 16 \text{ mL}$$

$$\boxed{\forall_{alcohol} = 20 \text{ mL}}$$

Prepare 60 mL of a 3:2 water:alcohol solution.

total parts = 3 + 2 = 5 parts

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{3 \text{ parts}}{5 \text{ parts}} = \frac{\forall_{water}}{60 \text{ mL}}$$

$$\forall_{water} = \frac{(3 \text{ parts})(60 \text{ mL})}{5 \text{ parts}} = 36 \text{ mL}$$

$$\boxed{\forall_{water} = 40 \text{ mL}}$$

$$C_{alcohol} = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{5 \text{ parts}} = \frac{\forall_{alcohol}}{60 \text{ mL}}$$

$$\forall_{alcohol} = \frac{(2 \text{ parts})(60 \text{ mL})}{5 \text{ parts}} = 24 \text{ mL}$$

$$\boxed{\forall_{alcohol} = 20 \text{ mL}}$$

Prepare a 3:2 water:alcohol solution using 27 mL of water.

total parts = 3 + 2 = 5 parts

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{3 \text{ parts}}{5 \text{ parts}} = \frac{27 \text{ mL}}{\forall}$$

$$\forall = \frac{(5 \text{ parts})(27 \text{ mL})}{3 \text{ parts}} = 45 \text{ mL}$$

$$\boxed{\forall_{total} = 45 \text{ mL}}$$

$$C_{alcohol} = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{5 \text{ parts}} = \frac{\forall_{alcohol}}{45 \text{ mL}}$$

$$\forall_{alcohol} = \frac{(2 \text{ parts})(45 \text{ mL})}{5 \text{ parts}} = 18 \text{ mL}$$

$$\boxed{\forall_{alcohol} = 18 \text{ mL}}$$

Prepare a 3:2 water:alcohol solution using 48 mL of alcohol.

total parts = 3 + 2 = 5 parts

$$C_{alcohol} = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{5 \text{ parts}} = \frac{48 \text{ mL}}{\forall}$$

$$\forall = \frac{(5 \text{ parts})(48 \text{ mL})}{2 \text{ parts}} = 120 \text{ mL}$$

$$\boxed{\forall_{total} = 120 \text{ mL}}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{3 \text{ parts}}{5 \text{ parts}} = \frac{\forall}{120 \text{ mL}}$$

$$\forall = \frac{(3 \text{ parts})(120 \text{ mL})}{5 \text{ parts}} = 72 \text{ mL}$$

$$\boxed{\forall_{water} = 72 \text{ mL}}$$

How would you prepare a 3:2 water:alcohol solution using 0.15 L of alcohol?

total parts = 3 + 2 = 5 parts

$$C_{alcohol} = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{5 \text{ parts}} = \frac{0.15\ L}{\forall}$$

$$\forall = \frac{(5\ \text{parts})(0.15 L)}{2\ \text{parts}} = 0.375\ L$$

$$\boxed{\forall_{total} = 0.38\ L}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{3 \text{ parts}}{5 \text{ parts}} = \frac{\forall}{0.375 L}$$

$$\forall = \frac{(3\ \text{parts})(0.375 L)}{5\ \text{parts}} = 0.225\ L$$

$$\boxed{V_{water} = 0.23\ L}$$

How would you prepare a total volume of 25 mL of a 3:1:2 solution containing oil:vinegar:water.

total parts = 3 + 1 + 2 = 6 parts

$$C_{oil} = \frac{\forall_{oil}}{\forall_{total}}$$

$$\frac{3 \text{ parts}}{6 \text{ parts}} = \frac{\forall}{25 \text{ mL}}, \quad \forall = \frac{(3 \text{ parts})(25 \text{ mL})}{6 \text{ parts}} = 12.5 \text{ mL}$$

$$\boxed{\forall_{oil} = 13 \text{ mL}}$$

$$C_{vinger} = \frac{\forall_{vinger}}{\forall_{total}}$$

$$\frac{1 \text{ parts}}{6 \text{ parts}} = \frac{\forall}{25 \text{ mL}}, \quad \forall = \frac{(1 \text{ parts})(25 \text{ mL})}{6 \text{ parts}} = 4.1\bar{6} \text{ mL}$$

$$\boxed{\forall_{vinger} = 4.2 \text{ mL}}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{6 \text{ parts}} = \frac{\forall}{25 \text{ mL}}, \quad \forall = \frac{(2 \text{ parts})(25 \text{ mL})}{6 \text{ parts}} = 8.\bar{3} \text{ mL}$$

$$\boxed{\forall_{water} = 8.3 \text{ mL}}$$

Prepare 80 mL of a 2:1:1 oil:vinegar:water solution.

total parts = 2 + 1 + 1 = 4 parts

$$C_{oil} = \frac{\forall_{oil}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{4 \text{ parts}} = \frac{\forall}{80 \text{ mL}}, \quad \forall = \frac{(2 \text{ parts})(80 \text{ mL})}{4 \text{ parts}} = 40 \text{ mL}$$

$$\boxed{\forall_{oil} = 40 \text{ mL}}$$

$$C_{vinger} = \frac{\forall_{vinger}}{\forall_{total}}$$

$$\frac{1 \text{ part}}{4 \text{ parts}} = \frac{\forall}{80 \text{ mL}}, \quad \forall = \frac{(1 \text{ part})(80 \text{ mL})}{4 \text{ parts}} = 20 \text{ mL}$$

$$\boxed{\forall_{vinger} = 20 \text{ mL}}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{1 \text{ part}}{4 \text{ parts}} = \frac{\forall}{80 \text{ mL}}, \quad \forall = \frac{(1 \text{ part})(80 \text{ mL})}{4 \text{ parts}} = 20 \text{ mL}$$

$$\boxed{\forall_{water} = 20 \text{ mL}}$$

Prepare a 2:1:1 oil:vinegar:water solution given 50 mL of oil.

total parts = 2 + 1 + 1 = 4 parts

$$C_{oil} = \frac{\forall_{oil}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{4 \text{ parts}} = \frac{50 \text{ mL}}{\forall}, \quad \forall = \frac{(4 \text{ parts})(50 \text{ mL})}{2 \text{ parts}} = 100 \text{ mL}$$

$$\boxed{\forall_{total} = 100 \text{ mL}}$$

$$C_{vinegar} = \frac{\forall_{vinegar}}{\forall_{total}}$$

$$\frac{1 \text{ part}}{4 \text{ parts}} = \frac{\forall}{100 \text{ mL}}, \quad \forall = \frac{(1 \text{ part})(100 \text{ mL})}{4 \text{ parts}} = 25 \text{ mL}$$

$$\boxed{\forall_{vinegar} = 30 \text{ mL}}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{1 \text{ part}}{4 \text{ parts}} = \frac{\forall}{100 \text{ mL}}, \quad \forall = \frac{(1 \text{ part})(100 \text{ mL})}{4 \text{ parts}} = 25 \text{ mL}$$

$$\boxed{V_{water} = 30 \text{ mL}}$$

Prepare a 2:1:1 oil:vinegar:water solution given 25 mL of vinegar.

total parts = 2 + 1 + 1 = 4 parts

$$C_{vinegar} = \frac{\forall_{vinegar}}{\forall_{total}}$$

$$\frac{1\ part}{4\ parts} = \frac{25\ mL}{\forall}, \quad \forall = \frac{(4\ parts)(25\ mL)}{1\ part} = 100\ mL$$

$$\boxed{\forall_{total} = 100\ mL}$$

$$C_{oil} = \frac{\forall_{oil}}{\forall_{total}}$$

$$\frac{2\ parts}{4\ parts} = \frac{\forall}{100\ mL}, \quad \forall = \frac{(2\ parts)(100\ mL)}{4\ parts} = 50\ mL$$

$$\boxed{\forall_{oil} = 50\ mL}$$

$$C_{water} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{1\ part}{4\ parts} = \frac{\forall}{100\ mL}, \quad \forall = \frac{(1\ part)(100\ mL)}{4\ parts} = 25\ mL$$

$$\boxed{\forall_{water} = 25\ mL}$$

How would you prepare a 2:1:1 oil:vinegar:water solution using 0.25 L of oil?

total parts = 2 + 1 + 1 = 4 parts

$$C_{oil} = \frac{\forall_{oil}}{\forall_{total}}$$

$$\frac{2 \text{ parts}}{4 \text{ parts}} = \frac{0.25\,L}{\forall}, \quad \forall = \frac{(4 \text{ parts})(0.25\,L)}{2 \text{ parts}} = 0.5\,L$$

$$\boxed{\forall_{total} = 0.5\,L}$$

$$C_{vinger} = \frac{\forall_{vinger}}{\forall_{total}}$$

$$\frac{1 \text{ part}}{4 \text{ parts}} = \frac{\forall}{0.5\,L}, \quad \forall = \frac{(1 \text{ part})(0.5\,L)}{(4 \text{ parts})} = 0.125\,L$$

$$\boxed{\forall_{vinger} = 0.13\,L}$$

$$C_{wate} = \frac{\forall_{water}}{\forall_{total}}$$

$$\frac{1 \text{ part}}{4 \text{ parts}} = \frac{\forall}{0.5\,L}, \quad \forall = \frac{(1 \text{ part})(0.5\,L)}{(4 \text{ parts})} = 0.125\,L$$

$$\boxed{\forall_{wate} = 0.13\,L}$$