

Compound Measures Mastery

Practice Worksheet (Compact Layout)

I DO

Liquid A has a density of 1.2 g/cm^3 .

Liquid B has a density of 0.8 g/cm^3 .

300 cm^3 of Liquid A is mixed with 200 cm^3 of Liquid B to make Liquid C.

Work out the density of Liquid C.

WE DO

Liquid X has a density of 1.5 g/cm^3 .

Liquid Y has a density of 0.5 g/cm^3 .

400 cm^3 of Liquid X is mixed with 100 cm^3 of Liquid Y to make Liquid Z.

Work out the density of Liquid Z.

YOU DO 1

Liquid P has a density of 1.4 g/cm^3 .

Liquid Q has a density of 0.9 g/cm^3 .

200 cm^3 of Liquid P is mixed with 300 cm^3 of Liquid Q to make Liquid R.

Work out the density of Liquid R.

YOU DO 2

Liquid M has a density of 0.6 g/cm^3 .

Liquid N has a density of 1.1 g/cm^3 .

500 cm^3 of Liquid M is mixed with 500 cm^3 of Liquid N to make a new mixture.

Work out the density of the new mixture.

CHALLENGE

Metal A has a density of 8 g/cm^3 .

Metal B has a density of 4 g/cm^3 .

A block of Metal A is melted and mixed with a block of Metal B to make Alloy C.

The mass of Metal A used is 400g. The mass of Metal B used is 200g.

Work out the density of Alloy C.

ANSWERS & WORKED SOLUTIONS**I Do**

Step 1: Find the mass of Liquid A using $\text{Mass} = \text{Density} \times \text{Volume}$. $1.2 \times 300 = 360\text{g}$.

Step 2: Find the mass of Liquid B. $0.8 \times 200 = 160\text{g}$.

Step 3: Find the Total Mass of Liquid C: $360 + 160 = 520\text{g}$.

Step 4: Find the Total Volume of Liquid C: $300 + 200 = 500 \text{ cm}^3$.

Step 5: Density of C = Total Mass $\div$ Total Volume = $520 \div 500 = 52 \div 50 = 104 \div 100$. **Answer: 1.04 g/cm^3**

We Do

Step 1: Mass of Liquid X = $1.5 \times 400 = 600\text{g}$.

Step 2: Mass of Liquid Y = $0.5 \times 100 = 50\text{g}$.

Step 3: Total Mass = $600 + 50 = 650\text{g}$.

Step 4: Total Volume = $400 + 100 = 500 \text{ cm}^3$.

Step 5: Density of Z = $650 \div 500 = 65 \div 50 = 130 \div 100$. **Answer: 1.3 g/cm^3**

You Do 1

Step 1: Mass of Liquid P = $1.4 \times 200 = 280\text{g}$.

Step 2: Mass of Liquid Q = $0.9 \times 300 = 270\text{g}$.

Step 3: Total Mass = $280 + 270 = 550\text{g}$. Total Volume = $200 + 300 = 500 \text{ cm}^3$.

Step 4: Density of R = $550 \div 500 = 55 \div 50 = 110 \div 100$. **Answer: 1.1 g/cm^3**

ANSWERS & WORKED SOLUTIONS (CONTINUED)

You Do 2

Step 1: Mass of Liquid M = $0.6 \times 500 = 300\text{g}$.

Step 2: Mass of Liquid N = $1.1 \times 500 = 550\text{g}$.

Step 3: Total Mass = $300 + 550 = 850\text{g}$. Total Volume = $500 + 500 = 1000\text{ cm}^3$.

Step 4: Density = $850 \div 1000$. **Answer: 0.85 g/cm^3**

Challenge

Step 1: Here we are given Mass, so we need to find Volume first. Volume = Mass $\div$ Density.

Step 2: Volume of Metal A = $400 \div 8 = 50\text{ cm}^3$.

Step 3: Volume of Metal B = $200 \div 4 = 50\text{ cm}^3$.

Step 4: Total Mass = $400 + 200 = 600\text{g}$. Total Volume = $50 + 50 = 100\text{ cm}^3$.

Step 5: Density of Alloy C = $600 \div 100$. **Answer: 6 g/cm^3**