

Dimensional Analysis & Unit Conversions

STUDENT PRACTICE WORKSHEET

Name: _____ Date: _____

Directions: Circle the best answer for 1-6. Show your full reasoning and units for 7-8. Compare with the separate key after completing the page.

Part A — Concept checks

1. How many centimeters are in 1.20 m?

- A. 12.0 cm B. 120 cm C. 0.0120 cm D. 1200 cm

2. Which conversion factor cancels hours when converting hours to minutes?

- A. 1 h / 60 min B. 60 min / 1 h C. 1 min / 60 h D. 60 h / 1 min

3. 0.0750 L equals how many milliliters?

- A. 7.50 mL B. 75.0 mL C. 750 mL D. 0.750 mL

4. A sample has density 2.0 g/mL. What is the mass of 3.0 mL?

- A. 1.5 g B. 5.0 g C. 6.0 g D. 0.67 g

5. Which unit should remain after converting 4.0 mol using 18.0 g/mol?

- A. mol B. g C. g/mol D. mol/g

6. 2500 mm equals how many meters?

- A. 0.25 m B. 2.5 m C. 25 m D. 250 m

Part B — Application and explanation

7. Convert 2.50 km to meters.

8. Explain why this guideline matters, with an example of what could go wrong if you ignore it: A unit conversion changes the numerical value and the unit; it does not change the actual physical amount.

REFERENCE RELATIONSHIP

given quantity $\times$ (desired unit / given unit) = converted quantity