

CHM 130: Chapter 3 Blackboard Homework Questions

1. 1 L = _____ mL
 2. 1 m = _____ cm
 3. 1 kg = _____ g
 4. 1 s = _____ μ s
 5. 1 m = _____ mm
 6. 1 g = _____ cg
 7. 1 km = _____ m
 8. 1 s = _____ ms
 9. 1 cm^3 = _____ mL
10. Select all of the following that are exact:
- a) 1000 ms = 1 s b) 1 mile = 1.609 km c) 1 lb = 454 g d) 1 gallon = 4 quarts e) 1 qt = 946 mL
11. How many meters are equal to 250.0 mm?
12. How many kilograms are equal to 175 cg?
13. A Honda Civic averages 45 miles per gallon. Calculate its gas mileage in kilometers per liter. (1 mile = 1.61 km and 1 qt = 946 mL)
14. The flower stalk on a century plant can grow up to 18 feet. If the stalk can grow the full height in 21 days, what is the rate of growth in centimeters per minute? (1 in = 2.54 cm)
15. Methanol's density is 0.791 g/mL. Calculate the mass of a 5.00 mL sample of methanol.
16. A 15.168 g sample of magnesium has a volume of 8.72 cm^3 . Calculate the density of magnesium.
17. Mercury's density is 13.6 g/mL. Calculate the volume (in mL) of a 50.0 g sample of mercury.
18. The initial water level in a 10 mL graduated cylinder was 5.00 mL. An 8.647-g aluminum rod was placed in the graduated cylinder, and the water level rose to 8.20 mL. Calculate the density of the aluminum rod.
19. 35°C = _____ °F 20. -67°F = _____ °C 21. 35°C = _____ K
22. The normal boiling point of acetone is about 329 K. What is the boiling point in degrees Celsius?
23. When you accidentally burn your hand on a hot pan, ... (Choose one)
- a. the heat transfers from the pan to your hand, so you gain heat.
 - b. the heat transfers from your hand to the pan, so you lose heat.
 - c. the cold transfers from the pan to your hand, so you lose heat.
 - d. the cold transfers from your hand to the pan, so you gain heat.
24. When you hold ice cubes in your hand, they feel cold because ... (Choose one)
- a. the heat transfers from the ice cubes to your hand, so you gain heat.
 - b. the heat transfers from your hand to the ice cubes, so you lose heat.
 - c. the cold transfers from the ice cubes to your hand, so you lose heat.
 - d. the cold transfers from your hand to the ice cubes, so you gain heat.
25. Check all of the following situations where you gain heat:
- a. The concrete feels warm under your bare feet
 - b. You open the refrigerator door.
 - c. You open the oven door while baking.
 - d. You step outside during a hot Phoenix summer.
 - e. The floor tile feels cold on a winter morning.
 - f. You burn your fingers on a hot light bulb.
 - g. You jump into a cold mountain lake.
 - h. You climb into a 103° hot spring.