

16. A force of 40 N is applied to an 8 kg ball. What is the acceleration of the cart? ($a=F/m$)

$$\frac{40\text{N}}{8\text{kg}} = 5\text{m/s}^2$$

17. A kid on a bike speeds away from rest to 10 m/s in 10 s. What is the kid's acceleration? ($a = \Delta V/t$)

$$\frac{10\text{m/s} - 0\text{m/s}}{10\text{s}} = \frac{10\text{m/s}}{10\text{s}} = 1\text{m/s}^2$$

18. What is the density of a metal block that has a mass of 25 g and a volume of 10 cm³?

$$D = \frac{m}{V} \quad \frac{25\text{g}}{10\text{cm}^3} = 2.5\text{g/cm}^3$$

Lab Safety and Equipment:

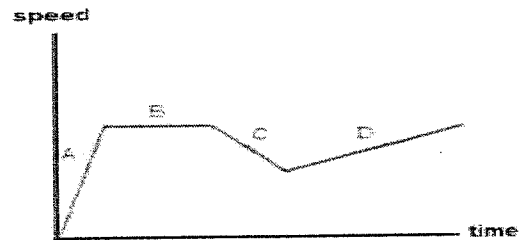
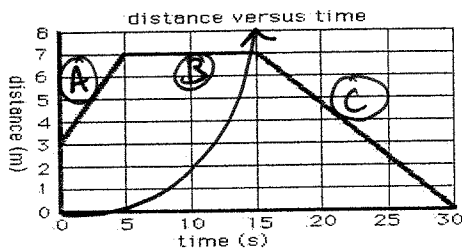
19. What are volumes of liquid measured with in the laboratory? How do you measure the volume of an irregularly shaped object? What do we use balances for?

- GRADUATED CYLINDER
- USE THE WATER DISPLACEMENT METHOD
- BALANCES ARE USED TO MEASURE MASS

20. What are three safety rules to follow while working on a science lab?

- A. READ LAB PROCEDURE + FOLLOW DIRECTIONS.
- B. NO EATING / DRINKING IN THE LAB.
- C. WEAR SAFETY EQUIPMENT APPROPRIATE FOR LAB SITUATIONS.

Distance-Time and Speed-Time Graphs:



21. What do the slopes on each graph tell you?

- D/T:
- A → SPEEDING AWAY
 - B → NOT MOVING
 - C → SPEEDING BACK TOWARDS START

- S/T:
- A → RAPID ACCELERATION
 - B → CONSTANT SPEED
 - C → DECELERATION
 - D → GRADUAL ACCELERATION

22. On a distance - time graph, what type of line would indicate that an object is accelerating? Draw it on the distance-time graph. A CURVED LINE.

23. Scientific Laws: State each law and give an example (description or picture)

Boyle's Law: PRESSURE ↑ VOLUME ↓ @ CONSTANT TEMP.
 (HELIUM BALLOON RISING / BUBBLES UNDERWATER)

Charles's Law: TEMP. ↑ VOLUME ↑ @ CONSTANT PRESSURE
 (LEAVING A BASKETBALL OUT ON A COLD NIGHT)