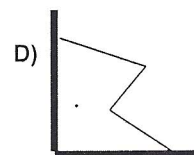
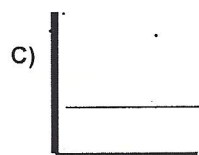
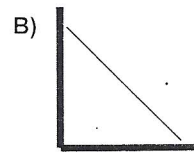
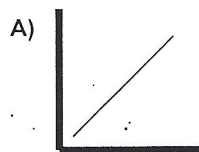


-Unit 4 Study Guide - full completion* = 10 point curve!

(* NO partial credit; all or nothing!)

1. List one property of air
2. As the altitude increases what happens to the temperature?
3. What is the name of the layer of the atmosphere that is closest to the earth?
4. The 80/20 rule is used to detail the % of the two major components of air. What element (name) does the 80 correspond to?
5. As temperature increases what happens to the volume?
6. As pressure increases what happens to volume?
7. Write the different units for pressure (ALL OF THEM!)
8. How do you convert Celsius to Kelvin

9. Which graph shows the expected relationship between temperature and volume?
10. Which graph shows the expected relationship between pressure and volume?
11. Which graph shows a direct relationship?
12. Which graph shows an inverse relationship?
13. What type of energy do all gas molecules have?



14. The volume of the lungs is measured by the volume of air inhaled or exhaled. If the volume of the lungs is 2.400 L during exhalation and the pressure is 101.70 KPa, and the pressure during inhalation is 101.01 KPa, what is the volume of the lungs during inhalation?
 - a. What formula you will use to answer this problem?
 - b. What variable are you solving for?
 - c. The answer to this problem is?
 - d. What does "L" stand for?
 - e. What does "Pa" stand for in KPa?

15. A block exerts a downward force of 30.0 N (newtons). The surface of the block that touches the ground is 15.0 cm by 20.0 cm.
 - a. What is the Force
 - b. What is the Area (in m^2)
 - c. What is the Pressure in Pascals?

16. When traveling from sea level to the top of a mountain, you would expect air pressure to?
17. In Boyle's law what is the relationship between pressure and volume of a gas
18. Convert 695 mmHg to atm
19. What word describe the collisions of gas molecules based on the Kinetic Molecular Theory (KMT)
20. What is the reason for gas pressure
21. You have a mixture of Oxygen and Hydrogen gas at 20°C which of the following is true
 - Hydrogen and oxygen molecules moving at the same speed
 - Hydrogen molecules are moving faster than oxygen molecules
 - Hydrogen molecules are moving slower than oxygen molecules
22. Hg is the chemical symbol for what element?

23. A balloon has a volume of 4.00 Liters at a Temperature of 5.0 Celsius and a pressure of 0.875 atm. What would the volume be at STP (Standard Temp and Pressure)

- Write the combined gas law
- What is Standard Temperature
- What is Standard Pressure
- Solve the problem.

24. You get off the airplane after traveling from Denver to New Orleans When you get the hotel and open your bottle of shampoo. What do you expect to happen?

- Where is the atmospheric pressure higher In Denver or in New Orleans?
- At higher pressure does gas volume increase or decrease?
- Is the relationship between pressure and volume directly or inversely proportional?
- When opening the shampoo bottle will air be forced in or out of the bottle?

25. How many moles are in 25 grams of water vapor?

- a. 44.8 b. 1.39 c. 13.9 d. 4.48

26. Which of the following is NOT a greenhouse gas? 1. CH₄ 2. CO₂ 3. H₂O 4. SO₄ 5. N₂O

27. What are photons?

28. CFC's are a group of compounds that contribute to the trapping of IR radiation responsible for the green house effect. What does CFC stand for?

29. N₂O is a green house gas. What does N₂O stand for?

30. What is the formula for carbon dioxide ?

31. Do scientists believe that man made greenhouse gasses have changed the climate?

32. Put the following in order from least energy to most energy.

- A) Visible light B) Radio C) Micro waves

33. Put the following in order from lowest to highest frequency.

- A) Visible light B) X - rays C) Radio

34. Which of the following types of solar radiation can not penetrate our atmosphere

- A) Visible light B) X - rays C) Radio

35. Acid rain is defined as precipitation that has a pH of _____ than 5.6.

- A) Lower B) higher

Name The following

36. CH₄ (g)

37. N₂O (g)

38. H₂SO₄ (aq)

39. HNO₃ (aq)

40. SO₃ (g)

Gas Stoichiometry



41. Balance the chemical equation.

42. How many liters of water (H₂O_(g)) can be formed if 1.25 liters of ethylene (C₂H_{4(g)}) are consumed in this reaction?

43. How many grams of water (H₂O_(g)) can be formed if 2.5 liters of oxygen (O_{2(g)}) are consumed in the reaction?

44. How many liters of carbon dioxide (CO_{2(g)}) can be formed if 35.3 grams of ethylene (C₂H_{4(g)}) are consumed in this reaction?

45. Which of the following has more particles per one mole in an one liter bottle:

- a. water (H₂O_(g)) b. carbon dioxide (CO_{2(g)}) c. oxygen (O_{2(g)}) d. ethylene (C₂H_{4(g)})