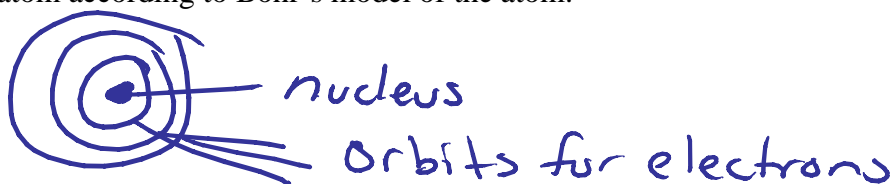
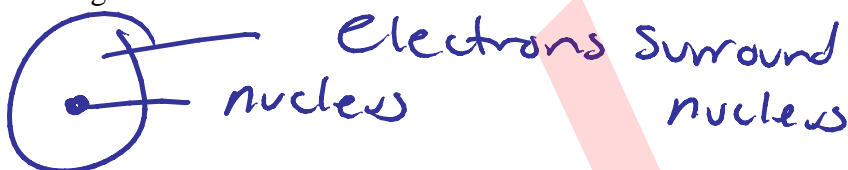


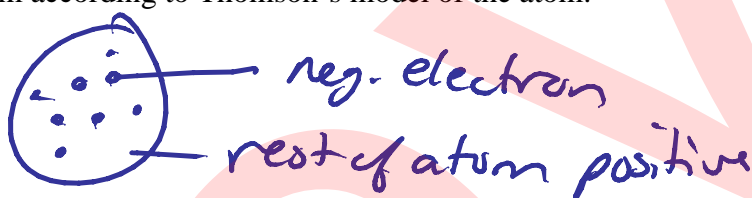
1. Draw and label an atom according to Bohr's model of the atom.



2. Draw and label an atom according to Rutherford's model of the atom.



3. Draw and label an atom according to Thomson's model of the atom.



4. Why can't you draw the current model of the atom?

it is a mathematical prediction

5. Name the one of the two men who helped develop the current model.

Broglie Schrödinger

6. What is the name of the current model of the atom.

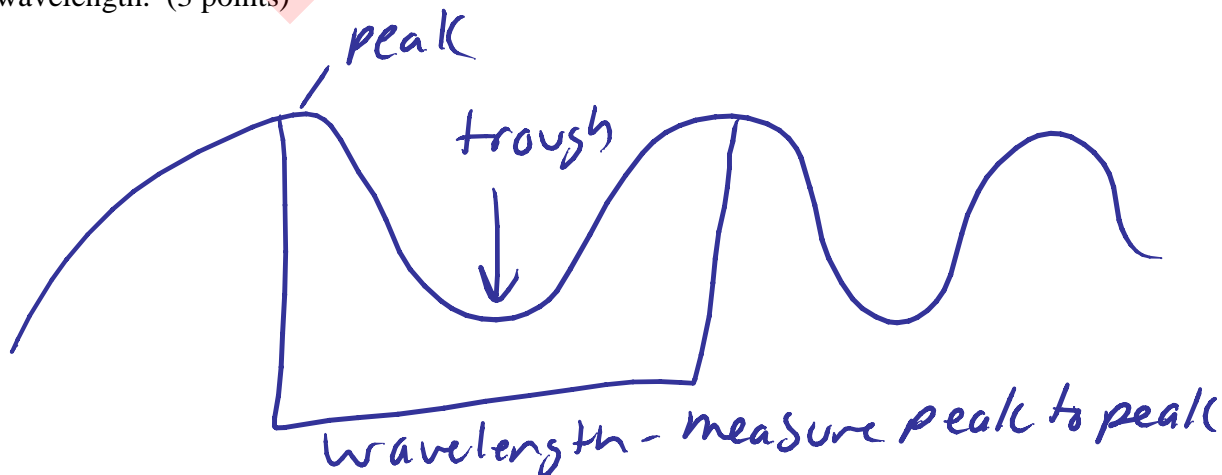
Wave Mechanical Model

7. Explain the difference between an **orbit** and an **orbital**.

Orbit - exact circular path

orbital - mathmatically predicted area where we expect to find

8. Draw a wave and label the peak, trough and where you would measure to find the wavelength. (3 points)



9. Define FREQUENCY: *how many peaks pass a given point in a given time*
10. Define WAVELENGTH: *distance from 1 peak to next consecutive peak*
11. Define SPEED: *how fast the wave is moving*
12. Light can behave as a wave and as a particle.

13. What is a photon?
a packet (particle) of electromagnetic or light energy

14. Put the following types of visible light in order from most energy (1) to least energy (6):

Orange	<u>5</u>
Yellow	<u>4</u>
Blue	<u>2</u>
Green	<u>3</u>
Violet	<u>1</u>
Red	<u>6</u>

15. Put the following in order from longest wavelength (1) to shortest wavelength (6):

Orange	<u>2</u>
Yellow	<u>3</u>
Blue	<u>5</u>
Green	<u>4</u>
Violet	<u>6</u>
Red	<u>1</u>

16. Put the following in order from most energy (1) to least energy (6):

ultraviolet	<u>2</u>
microwave	<u>5</u>
x-ray	<u>1</u>
radio	<u>6</u>
visible light	<u>3</u>
infrared	<u>4</u>

17. Put the following in order from longest wavelength (1) to shortest wavelength (6):

ultraviolet	<u>5</u>
microwave	<u>2</u>
x-ray	<u>6</u>
radio	<u>1</u>
visible light	<u>4</u>
infrared	<u>3</u>

18. Define QUANTIZED: only certain values are allowed

19. What two things does the Principle Energy Level tell you? ③ Size of orbitals
① distance from nucleus ② Number of sublevels

20. What are used to represent the different sublevels?

Letters = s, p, d, f

21. What does the sublevel tell you?

Shape of orbital

22. The lowest energy level is known as the ground state.

23. If energy is added to an atom it is said to be in an excited state.

24. The closer an orbital is to the nucleus the less energy it has.

25. What is the complete electron configuration of Phosphorus atomic # = 15)

$1s^2 2s^2 2p^6 3s^2 3p^3$

26. What is the complete electron configuration of Xenon (atomic # = 54)

$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6$

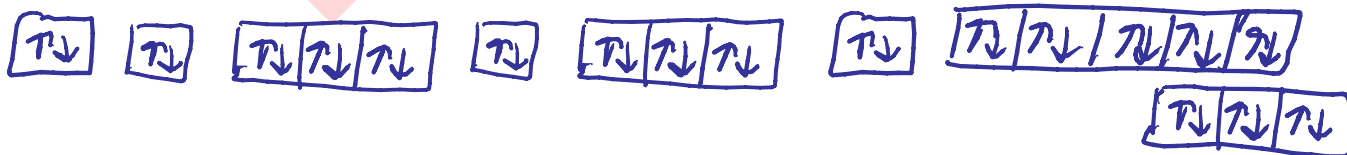
27. What is the abbreviated electron configuration of Silver (atomic # = 47)

$[Kr] 5s^2 4d^9$

28. What is the abbreviated electron configuration of Gold (atomic # = 79)

$[Xe] 6s^2 4f^{14} 5d^9$

29. Draw an orbital diagram of the electron configuration of Arsenic (atomic # = 33)



30. Draw an orbital diagram of the electron configuration of Iron (atomic # = 26)

