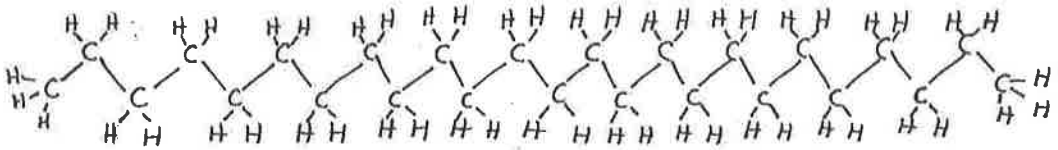
MAKE UP DATA

Chem Lab: Combustion of iron wool and a candle *Name:*_____ *p.*____ *Seat #*____

Pre-lab Questions: 1. Fill out the left side of the first quantitative data table on the back. (for the oxidation of iron wool).

2. **a.** Fill in the name of each of the iron compounds, below.
b. Calculate the % oxygen in each of the iron oxide compounds.

FeO _____ Fe_2O_3 _____



3. The approximate formula for the candle wax/paraffin is $C_{25}H_{52}$.
a. Write the **balanced** reaction for the combustion of $C_{25}H_{52}$ (fill in the blanks, below and show subscripts on all four substances.):
b. The structure of $C_{25}H_{52}$ is shown above. **Draw** the Lewis dot structures of the other three reactants/products below the reaction.

$C_{25}H_{52}$( ) + _____ ---------> _____ + _____

c. Classify each of these as a metal element, a nonmetal element, a covalent compound, or an ionic compound.

paraffin _____

The substance that paraffin reacts with._____

iron oxide_____

iron_____

the products of the combustion of paraffin_____

4. Draw the Lewis Dot Structure for each of these. Use brackets when appropriate.

oxygen atom oxide ion

5. Draw a picture of solid iron (II) oxide on an atomic/ionic scale. Show all charges.

Qualitative Data: Combustion of Iron Wool:
Be sure to include the appearance of the iron before, during, and after the burning process. (Include colors, textures, etc!)

Before burning: _____

During burning: _____

After burning: _____

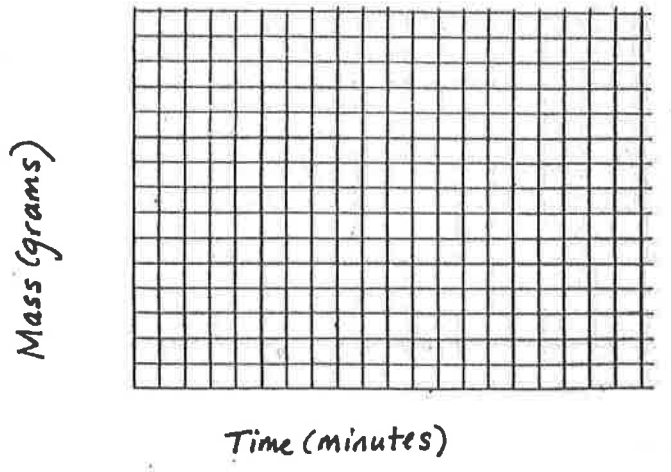
Quantitative Data: Combustion of Iron Wool.

Mass of Crucible	15.81 g
Mass of Crucible + Fe	17.01 g
Mass of Crucible + Fe_xO_y	17.39 g

Quantitative Data: Combustion of a Candle

Time (minutes)	Mass (grams)
0	99.70
1	99.59
2	99.53
3	99.46
4	99.38
5	99.31
6	99.23
7	99.14

Mass of a Candle as a Function of Burning Time



Data Analysis:

1. Make a graph (above) showing the mass of the candle as a function of time. Label each axis.
Make sure you use at least half the space for the time and for the mass.
(You don't necessarily need to include zero mass or zero time on graph... it depends on your data!)

2. Calculate the mass of iron wool in the crucible (before burning).

3. Calculate the mass of iron oxide product in the crucible (after burning).

4. Calculate the grams of oxygen in the iron oxide product.

5. Calculate the % oxygen (by mass) in the iron oxide product, according to your **lab data.**