

AP WORKSHEET 00ABCD: Preamble Summary

- Classify the following as either **chemical** or **physical** changes. (3)
 - Ice melting
 - Gasoline burning
 - Evaporation of perfume from an open bottle
- Mercury is a liquid metal that has a density of 13.58 g/mL. Calculate the volume of mercury that must be poured out in order to obtain 0.5000 g of Mercury. (2)
- Classify the following as either **quantitative** or **qualitative** observations. (4)
 - My eyes are brown
 - My neck size is 17 inches
 - My average grade last year was 79%
 - Physics is a difficult subject
- Give an example of a natural law (other than the law of conservation of mass). (1)
- Convert these numbers to scientific notation. (2)
 - 35800000000000
 - 0.00000000821

6. Round the following numbers to four figures. (6)

- (a) 2.16347×10^5
- (b) 4.000574×10^6
- (c) 3.682417
- (d) 7.2518
- (e) 375.6523
- (f) 21.860051

7. Perform the following conversions. (5)

- (a) 0.75 kg to milligrams
- (b) 1500 millimeters to km
- (c) 2390 g to kg
- (d) 0.52 km to meters
- (e) 65 kg to g

8. Complete the following table of temperatures, performing the appropriate conversions. (18)

Kelvin	Fahrenheit	Celsius
200.		
23.0		
0.000		
	180.	
		45.0
500.		
	350.	
		97.0
		30.0

9. An experiment is performed in which the molar mass of a gas is found to be 48.45 g mol^{-1} . The published (actual) value is 52.98 g mol^{-1} . Calculate the percentage error. (2)

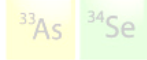
10. Distinguish carefully between precision and accuracy. (2)

11. In the table below, match the scientist with the experiment. (2)

Scientist	Experiment
Crookes	Oil Drop
Millikan	Cathode Ray
Rutherford	Gold Foil

12. Consider the following pairs; does either pair represent a pair of isotopes? Explain. (4)

(a) $^{11}\text{Na}_{23}$ and $^{11}\text{Na}_{24}$



(b) $^{11}\text{Na}_{24}$ and $^{12}\text{Mg}_{24}$

13. Determine the number of protons, electrons and neutrons in each of the following species. (3)

(a) $^{79}\text{Au}_{171}$

(b) $^{79}\text{Au}_{182}$

(c) $^{35}\text{Br}^{-}_{79}$

14. In the following question give the missing formula or name. (10)

Formula	Name
CaS	
Pb ₃ N ₂	
AlP	
HBrO ₄	
(NH ₄) ₂ CO ₃	
	Calcium ethanoate
	Phosphorous pentachloride
	Strontium bromite
	Potassium hydrogen carbonate
	Chloric acid

