

The Periodic Table

- 1.) Predict the properties of the unknown element using the properties of its neighbours and whatever mathematical methods seem appropriate. If Mendel could do it, so can you!

Atomic mass Density ($\frac{g}{mL}$) Density of oxide ($\frac{g}{mL}$) Formula of chloride Density of chloride ($\frac{g}{mL}$) Colour Lustre	Al	27.1 2.70 3.97 $AlCl_3$ 2.44 Silvery white metallic	Si	28.1 2.33 2.65 $SiCl_4$ 1.48 Grey metallic	P	31.0 1.82 2.14 $PCl_3(l), PCl_5(g)$ 1.57 (liquid) Pale yellow waxy
Atomic mass Density ($\frac{g}{mL}$) Density of oxide ($\frac{g}{mL}$) Formula of chloride Density of chloride ($\frac{g}{mL}$) Colour Lustre	Ga	69.7 5.90 5.88 $GaCl_3$ 2.47 Silvery metallic	Ge	72.6 5.35 4.23 $GeCl_4$ 1.84 Greyish white metallic	As	74.9 5.73 3.87 $AsCl_3$ 2.16 Steel grey Dull metallic
Atomic mass Density ($\frac{g}{mL}$) Density of oxide ($\frac{g}{mL}$) Formula of chloride Density of chloride ($\frac{g}{mL}$) Colour Lustre	In	114.8 7.31 7.18 $InCl_3$ 3.46 Silvery white metallic	Sn	118.6 7.28 6.95 $SnCl_2, SnCl_4$ 3.95, 2.23 Silvery white metallic	Sb	121.8 6.69 5.67 $SbCl_3, SbCl_5$ 3.14, 2.34 Bluish-white metallic

- 2.) State the chemical family or group to which each of the following elements belongs.

a.) radon Noble gas	c.) iodine Halogen	e.) calcium Alkaline earth	g.) zinc Transition met
b.) iron Transition met	d.) lithium Alkali met	f.) cesium Alkali met	h.) chlorine Halogen

- 3.) Give the symbol for the two other elements in the same family as the following.

a.) Na Li, K, Rb, Cs, Fr	b.) Ar He, Ne, Kr, Xe, Rn	c.) Mg Be, Ca, Sr, Ba, Ra	d.) Br F, Cl, I, At
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- 4.) Give the symbols for the two other elements in the same period as the following.

a.) C Li, Be, B, N, O, Ne	b.) S Na, Mg, Al, Si, P, S, Cl, Ar
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