split the steam into hydrogen and oxygen. The hydrogen then exploded.

5) a) $\text{mass remaining} = \dfrac{\text{original mass}}{2^{\#\text{half-lives}}}$

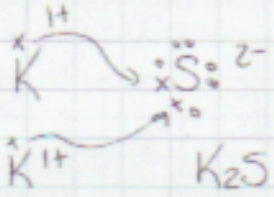
$\#\text{half-lives} = \dfrac{5216.2\text{ years}}{87.7\text{ years}} = 6$ $\quad \text{mass remaining} = \dfrac{5000\text{kg}}{2^6} = 78.1\text{kg}$

b) $\#\text{half-lives} = \dfrac{6404\text{ years}}{1601\text{ years}} = 4$ $\quad \text{mass remaining} = \dfrac{100\text{g}}{2^4} = 6.25\text{g}$

6) a) An ionic bond is a bond (force of attraction) created when a metal transfers a valence electron to a nonmetal.

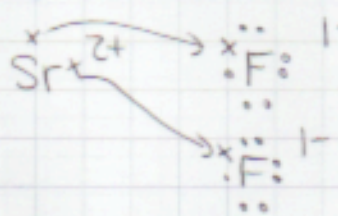
b) - very strong bond
- high melting & boiling points
- conduct electricity when molten or dissolved in water

c) i)



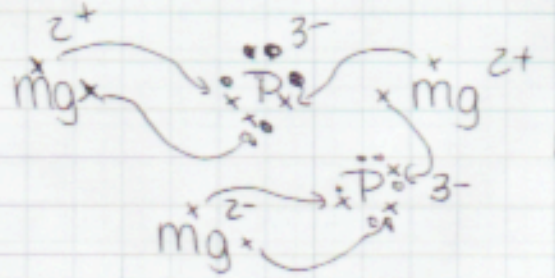
K_2S

ii)



SrF_2

iii)

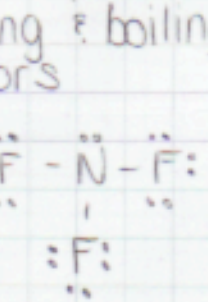


Mg_3P_2

7 a) A covalent bond is a bond formed when 2 nonmetals share valence electrons

b) - strong bond
- lower melting & boiling points
- nonconductors

c) i) NF_3

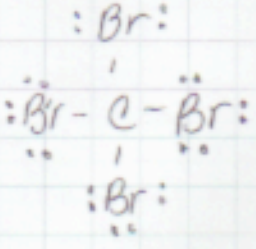


$1(5e^-) + 3(7e^-) = 26e^-$

$\dfrac{26e^-}{2} = 13$ prs

13 prs − 3 = 10 lone prs

ii) CBr_4



$1(4e) + 4(7e) = 32e^-$

$\dfrac{32e^-}{2} = 16$ prs

16 prs − 4 = 12 lone prs.