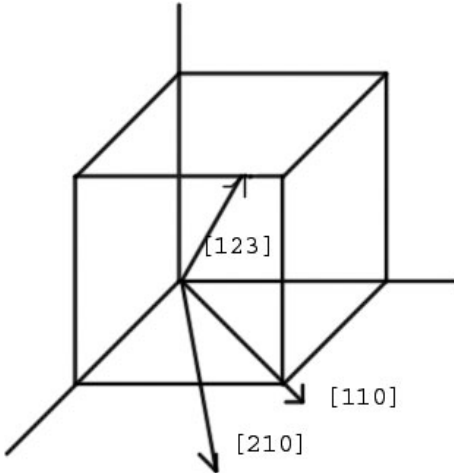


b.)



4. The projections are in the notes as the CaF_2 structure with the oxygen filling the Ca sites and the Na filling the F sites. The structure is the same as the CaF_2 structure. O is 8 coordinated and Na is 4 coordinated.

5.

Plane	(100)	(110)	(200)	(222)	(004)
d_{hkl}	4	2.84	2	1.28	1.5
θ	10.8°	15.4°	22.0°	35.9°	30.0°

6. For Cubic $c = a$ so:

$$1 / d_{hkl}^2 = (h^2 + k^2 + l^2) / a^3$$

The formula only works when $\alpha = \beta = \gamma = 90^\circ$ because the formula is an application of the Pythagorean theorem.