1. Calculate the # TVL and the thickness of lead (Pb) required to reduce the exposure rate from a 450 mR/hr Co-60 source to less than 5mR/hr. One TVL for Co-60 and lead is 4.0 cm.

2. Calculate the shielded exposure rate from a 500mR/hr Cs-137 source with 5cm of lead shielding. The HVL for Cs-137 and lead is 0.65cm.

3. Calculate the shielded exposure rate from a 7.4 R/hr Cs-137 source with 4cm of lead shielding. The HVL for Cs-137 and lead is 0.65cm.

4. Calculate the # TVL and the thickness of lead required to reduce the exposure rate from a 7.5R/hr Co-60 source to less than 100 mR/hr. One TVL for Co-60 and lead is 4.0cm.

5. The dose rate outside a shield wall is found to be 0.5mrad/h gamma, 0.2 mrad/h thermal neutron ($w_r = 2$), and 0.1 mrad/h fast neutrons ($w_r = 20$). What is the dose equivalent rate of the combined radiation fields?