Half Life Problems

1. Carbon-14 has a half life of 5730 years. Consider a sample of fossilized wood that when alive would have contained 24g of C-14. It now contains 1.5g. How old is the sample?

2. With a half life of 28.8 years, how long will it take 1g of strontium-90 to decay to 125mg?

3. Co-60 has a half life of 5.3 years. If a pellet that has been in storage for 26.5 years contains 14.5g of Co-60, how much of this radioisotope was present when the pellet was put in storage?

4. A 1.000kg block of phosphorus-32, which has a half life of 14.3 days, is stored for 100.1 days. At the end of this period, how much phosphorus-32 remains?

5. Radon has a half life of 3.8 days. After 7.6 days, 6.5g remain. What was the mass of the original sample?

6. A 0.5g sample of radioactive Iodine-131 has a half life of 8.0 days. After 40 days, how much is left?

7. The half life of sodium-25 is 1.0 minutes. Starting with 1 kg of this isotope, how much will remain after ½ hour.

8. What is the half life of Po-214 if after 820 seconds, a 1.0g sample decays to 0.03125g?