- SPS3. Standard SPS3: Students will distinguish the characteristics and components of radioactivity.
- C. Explain the process half-life as related to radioactive decay.
- Learning Target: I will be able to explain and demonstrate half-life as it relates to Radioactive Decay.

Half-life Review Problems

Write the following by each problem: HL, SA, EA, ET

HL = Half-life SA = Starting Amount EA = Ending Amount ET = Ending Time

a. Iodine-131 is used to destroy thyroid tissue in the treatment of an overactive thyroid. The half-life of iodine-131 is 8 days. If a hospital receives a shipment of 200 g of iodine-131, how much I-131 would remain after 32 days?

HL = _____ SA = _____ EA = _____ ET = _____

Time	Amount

b. Technetium-99 is used for brain scans. If a laboratory receives a shipment of 200 g of this isotope, how much will remain after 24 hours. The half-life of Technetium-99 is 6 hours.

HL = _____ SA = _____ EA = _____ ET = _____

Time	Amount

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LIVEWORKSHEETS

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c. Mercury-197 is used for kidney scans and has a half-life of 3 days. It the 32 grams of mercury-197 is ordered, but takes 15 days to arrive, how much would arrive in the shipment?

HL = _____ SA = _____ EA = _____ ET = _____

Time	Amount

d. The half-life of strontium-90 is 25 years. How much strontium-90 will remain after 100 years if the initial amount is 4.0 g?

HL = _____ SA = _____ EA = _____ ET = _____

Time	Amount

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e. If the half-life of uranium-232 is 70 years, how many half-lives will it take for 10 g of it to be reduced to 1.25 g?

HL = _____ SA = _____ EA = _____ ET = _____

Time	Amount

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LIVEWORKSHEETS