

# HALF-LIFE OF RADIOACTIVE ISOTOPES

1. How much of a 100.0 g sample of  $^{198}\text{Au}$  is left after 8.10 days if its half-life is 2.70 days?

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2. A 50.0 g sample of  $^{16}\text{N}$  decays to 12.5 g in 14.4 seconds. What is its half-life?

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3. The half-life of  $^{42}\text{K}$  is 12.4 hours. How much of a 750 g sample is left after 62.0 hours?

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4. What is the half-life of  $^{99}\text{Tc}$  if a 500 g sample decays to 62.5 g in 639,000 years?

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5. The half-life of  $^{232}\text{Th}$  is  $1.4 \times 10^{10}$  years. If there are 25.0 g of the sample left after  $2.8 \times 10^{10}$  years, how many grams were in the original sample?

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6. There are 5.0 g of  $^{131}\text{I}$  left after 40.35 days. How many grams were in the original sample if its half-life is 8.07 days?

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