

PHYS1120  
Summer 2025

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1. A 22 g sample of an unknown element is found to decay to 2.490 g after 4.715 ms. Use the table below to determine which element this sample is.

isotope	↔	half-life $10^{-3}$ seconds
francium-218		1.0
bismuth-204m2		1.07
protactinium-217m		1.08
meitnerium-266		1.2
nobelium-258		1.2
uranium-216m		1.31
polonium-187		1.40
nihonium-278		1.4
sodium-35		1.5
radium-215		1.55
darmstadtium-271m		1.7