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| ••44 | http://edugen.wiley.com/edugen/courses/crs4957/common/art/go.gif Figure [42-19](http://edugen.wiley.com/edugen/courses/crs4957/halliday9118/halliday9088c42/halliday9118/halliday9088c42/halliday9088c42xlinks.xform?id=halliday9088c42-fig-0019) shows the decay of parents in a radioactive sample. The axes are scaled by *N*s = 2.00 × 106 and *ts* = 10.0 s. What is the activity of the sample at *t* = 27.0 s?   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | |  | | --- | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | | |  |  |  |  | | --- | --- | --- | --- | | |  | | --- | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | | http://edugen.wiley.com/edugen/courses/crs4957/halliday9118/halliday9088c42/image_n/nt0025-y.gif | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | | | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | | |  |  |  | | --- | --- | --- | | [Figure zoom](http://edugen.wiley.com/edugen/courses/crs4957/halliday9118/halliday9088c42/halliday9118/halliday9088c42/halliday9088c42xlinks.xform?id=halliday9088c42-fig-0019) | Figure 42-19 | Problem [44](http://edugen.wiley.com/edugen/courses/crs4957/halliday9118/halliday9088c42/halliday9118/halliday9088c42/halliday9088c42xlinks.xform?id=halliday9088c42-prob-0071). | | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | | http://edugen.wiley.com/edugen/courses/crs4957/common/art/pixel.gif | |

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| ••45 | |  | | --- | | Top of Form  Bottom of Form |   In 1992, Swiss police arrested two men who were attempting to smuggle osmium out of Eastern Europe for a clandestine sale. However, by error, the smugglers had picked up 137Cs. Reportedly, each smuggler was carrying a 1.0 g sample of 137Cs *in a pocket!* In (a) bequerels and (b) curies, what was the activity of each sample? The isotope 137Cs has a half-life of 30.2 y. (The activities of radio-isotopes commonly used in hospitals range up to a few millicuries.) |

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