Task:

Phosphorus-32 is used in the treatment of leukemia. It has a half-life of 14 days. If a sample received by a medical lab has a mass of 16.0 g, how many grams of the sample is still active 8.0 weeks later. Assume 1 week = 7 days.

Answer:

$$N = \frac{N_o}{2^{\frac{T}{t}}}$$

where:

N – resulting amount of the active substznce, g;

N_o – initial amount of the active substznce, g;

T – elapsed time, days;

t – half-life time, days.

$$N(P-32) = \frac{16}{2^{\frac{56}{14}}} = 1\,g$$