

Kinetics II Quiz

✓/✗

Name: _____

Mark Dibbs

May I post your solution?

Yes

No

Yes, but redact my name

Consider the reaction:



The initial concentration of A is $[A]_0 = 0.561$ M. You determine the first three, successive half-life times of A to be 483, 483, and 483 seconds.

How long will it take for the concentration of A to decrease to 0.241 M?

First order b/c half-life is constant over time

$$483 = \frac{t_{1/2}}{k} \Rightarrow k = .001435 \text{ 1/s}$$

$$\ln[A]_t = -kt + \ln[A]_0$$

$$\ln(0.241) = -(0.001435)t + \ln(.561)$$

$$t = 589 \text{ seconds}$$

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KARISSA MCCRIGHT

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Consider the reaction:



The initial concentration of A is $[A]_0 = 0.561$ M. You determine the first three, successive half-life times of A to be 483, 483, and 483 seconds.

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FIRST ORDER

$$t_{1/2} = \frac{\ln 2}{k}$$

$$483 = \frac{.693}{k}$$

$$k = .0014 \frac{1}{s}$$

$$\ln(.241) = -.0014t + \ln(.561)$$

$$t = 589 \text{ sec}$$