Consider the reaction $C_4H_9Br + OH^{-1} \rightarrow C_4H_9OH + Br^{-1}$.

When the concentration of C_4H_9Br is doubled, the rate of the reaction increases by a factor of two. When the concentrations of all reactants and products are doubled, the rate also doubles. **What is the overall order of the reaction?**

1. Zero order
2. First order
3. Second order
4. Third order
5. Fourth order
6. Fifth order

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What is the overall order of the reaction?

7%	1. Zero order
80%	2. First order
10%	3. Second order
2%	4. Third order
1%	5. Fourth order
0%	6. Fifth order

For the same material, does it take longer for 1 ton to go to ½ ton <u>or</u> for 1 gram to go to ½ gram?

1. It takes longer to go from 1 gram to ½ gram
2. It takes longer to go from 1 ton to ½ ton
3. The conversion times are equal.

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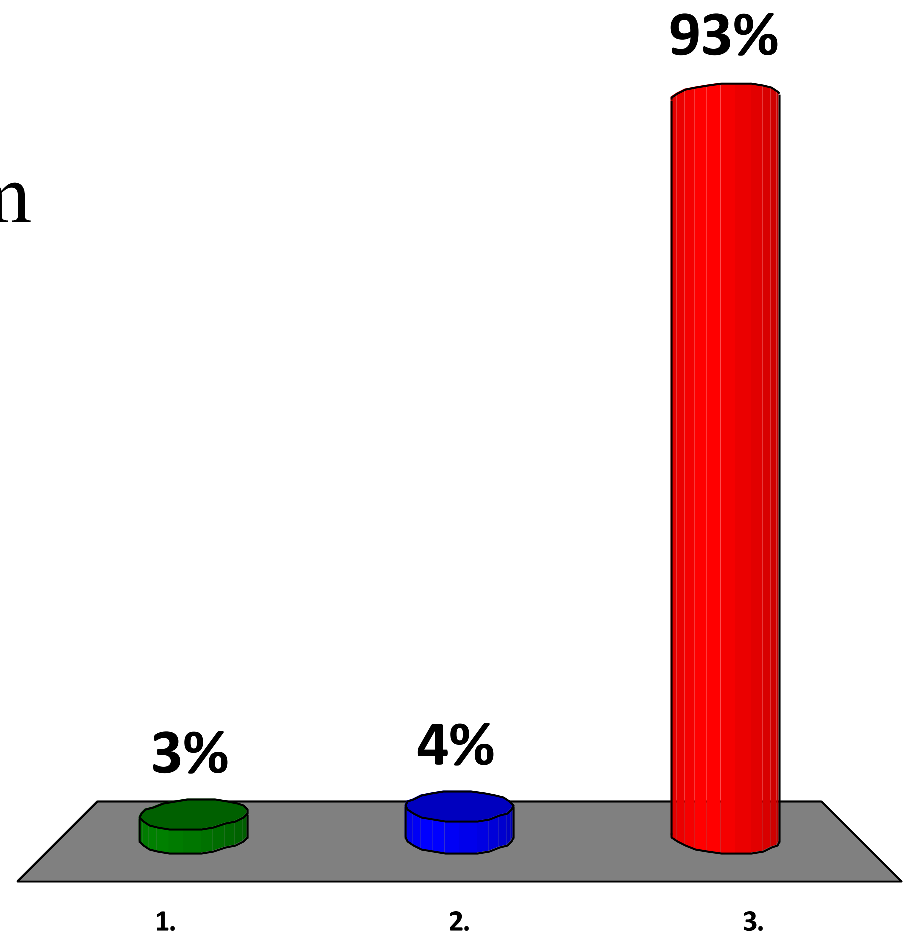


Which is the correct calculation of the number of nuclei in 1.5 microgram of ^{99}Tc?

1. $1.5 \times 10^{-3}\ \text{g} \times \frac{1\ \text{mol}}{98.\ \text{g}} \times 6.022 \times 10^{23}\ \text{mol}^{-1} = 9.2 \times 10^{18}$
2. $1.5 \times 10^{-6}\ \text{g} \times \frac{1\ \text{mol}}{98.\ \text{g}} \times 6.022 \times 10^{23}\ \text{mol}^{-1} = 9.2 \times 10^{15}$
3. $1.5 \times 10^{-6}\ \text{g} \times \frac{1\ \text{mol}}{99.\ \text{g}} \times 6.022 \times 10^{23}\ \text{mol}^{-1} = 9.1 \times 10^{15}$
4. $1.5 \times 10^{-6}\ \text{g} \times \frac{1\ \text{mol}}{99.\ \text{g}} = 1.5 \times 10^{-8}$

Which is the correct calculation of the number of nuclei in 1.5 microgram of ^{99}Tc?

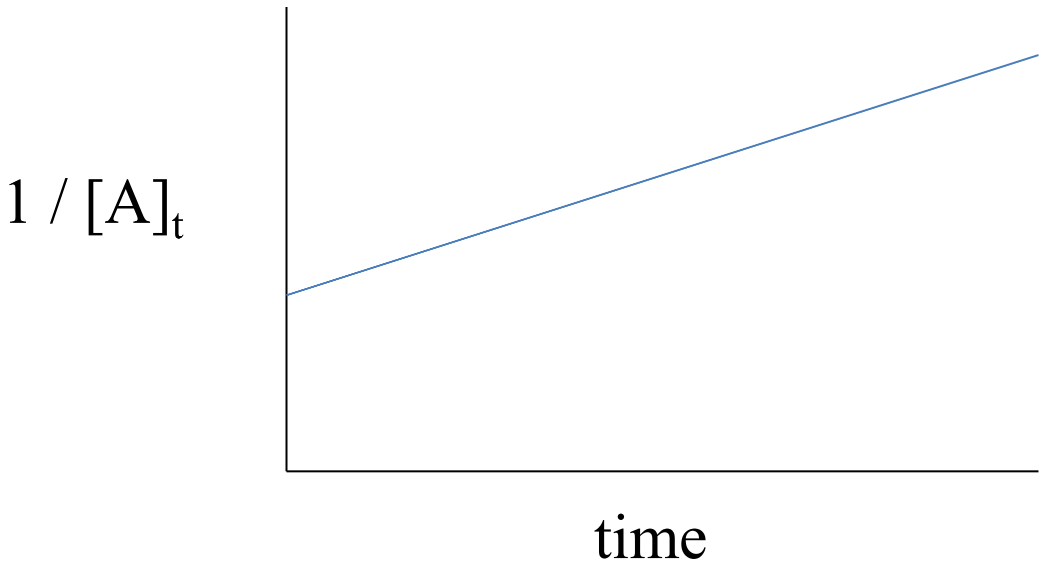
1% 1. $1.5 \times 10^{-3}\ g \times \frac{1\ mol}{98.\ g} \times 6.022 \times 10^{23}\ mol^{-1} = 9.2 \times 10^{18}$

19% 2. $1.5 \times 10^{-6}\ g \times \frac{1\ mol}{98.\ g} \times 6.022 \times 10^{23}\ mol^{-1} = 9.2 \times 10^{15}$

77% 3. $1.5 \times 10^{-6}\ g \times \frac{1\ mol}{99.\ g} \times 6.022 \times 10^{23}\ mol^{-1} = 9.1 \times 10^{15}$

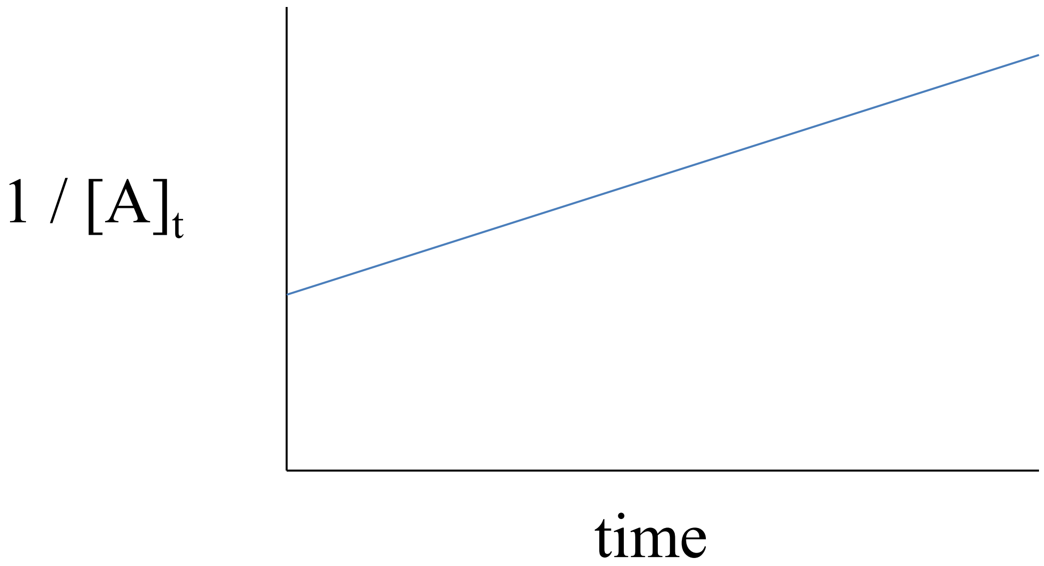
3% 4. $1.5 \times 10^{-6}\ g \times \frac{1\ mol}{99.\ g} = 1.5 \times 10^{-8}$

The y-intercept is equal to:



1. $1/[A]_t$
2. $1/[A]_0$
3. $[A]_t$
4. $[A]_0$

The y-intercept is equal to:



2% 1. $1/[A]_t$

93% 2. $1/[A]_0$

1% 3. $[A]_t$

4% 4. $[A]_0$

Example(s) of an uni-molecular process

1. $CO_2\ (g) \rightarrow C\ (gr) + O_2\ (g)$
2. $U^{238} \rightarrow Th^{234}$
3. $NO_2 + CO \rightarrow NO + CO_2$
4. 1 and 2
5. 1 and 3
6. All of the above

Example(s) of an uni-molecular process

7%	1. $CO_2\ (g) \rightarrow C\ (gr) + O_2\ (g)$
15%	2. $U^{238} \rightarrow Th^{234}$
1%	3. $NO_2 + CO \rightarrow NO + CO_2$
64%	4. 1 and 2
7%	5. 1 and 3
7%	6. All of the above