

Unit 3 Discussion Example – Post 2: Reply to a Classmate

Hi Classmate!

- You calculated that the remaining amount of radioactive material was 0.042cc. So then the starting amount and amount of antibody becomes, $A_0 = 0.042\text{cc}$
- If I want 0.01 cc left, I will let $A = 0.01\text{cc}$ and solve for y , the number of years. My formula is

$$0.01 = \frac{0.042}{(y^2 + 1)}$$

Solving for y , I get:

$$0.01 = \frac{0.042}{(y^2 + 1)}$$

$$0.01(y^2 + 1) = 0.042$$

$$0.01y^2 + 0.01 = 0.042$$

$$0.01y^2 = 0.032$$

$$\frac{0.01y^2}{0.01} = \frac{0.032}{0.01}$$

$$y^2 = 3.2$$

$$\sqrt{y^2} = \sqrt{3.2}$$

$$y = 1.789 \text{ years}$$

So, by injecting the antibody, you know that in 1.789 years, you will have basically nothing left (0.01cc remaining)! Hang on – soon, it will be gone!

- It will cost you $10,000 * 0.042 = \$420$. For just over four hundred dollars, you could be rid of the substance in less than 2 years. I would definitely go for it!