

question**45** views**comprehension check on logistic growth model (week 6)**

2 questions:

1c. What is the value of **b**, if you know that **f(1) = 750**. (*Round to 3 decimal places.*)*I have $a = 149$, so I solved with $f(1) = 750 = 75,000 / (1 + 149 * b^{-1})$ and got $b = 0.149$ which is wrong - any help here?*

and

1e. After how many months will the spread of the virus begin to slow down? (*Round to 2 decimal places.*)*With help on 1c, my guess that will help me with 1e. Thank you! Still catching up here (I'm on week 6, and week 8 was just given 2 days ago!) I think I'll catch up before the course ends.*

comprehension_check6

5 days ago by Karen West

the students' answer, where students collectively construct a single answerquestion 1c: $(75000/750 - 1)/149 = b^{-1} \rightarrow b = 149/(75000/750 - 1)$

question 1e: The reading materials show that the inflection point C/2 is when the growth starts to slow down.

5 days ago by Anonymous

followup discussions for lingering questions and comments

Resolved



Unresolved

**Karen West** 22 hours ago

Hi - just getting back to this class today. I understand my mistake with 1c, but not 1e, and here is my question.

If C/2 is where the growth starts to slow down, that is 37500.

Following the logistic model formula, $f(t) = C / (1 + ab^{-t})$

So: $37500 = 75000 / (1 + (149)(1.505)^{-t})$

Solve for t to get the number of months.

Please correct me if I'm wrong here. So the final math is:

$-t = \log((75000/37500 - 1)/149)$ so I got $t = 2.17$ months.

Please help re-direct me if you know where I've gone wrong. Thank you!

As you may have noticed, I'm behind in this class, but I have a plan to get it done on time!

Complete this Unit 6 I'm working on now this week, along with Unit 7.

Next week get Units 8 and 9 done, and the final week, Units 10 and 11. ;-)

Hopefully I'll get there! Thanks for your help.



Anonymous 21 hours ago your equation should be $-\ln[(75000/37500 - 1)/149] / \ln(1.505)$ gives you a better answer!



Karen West 20 hours ago Thank you - it's been many, many years since I've done this math I used to know inside out when I was younger! ;-)



Resolved



Unresolved

**Karen West** 18 hours ago

In the solving for "T" section of the exponential model function, last part of the comprehension check, my math is off again, if you know what I'm doing wrong here.

1d. How many years does it take for population to drop **below 1,000**? (*Round to 2 decimal places.*)

I said:

$$999 = 10(0.85)^t$$

$$(999/10) = 0.85^t$$

$$\log(99.9) = t * \log(0.85)$$

$$t = \log(99.9) / \log(0.85)$$

you get a negative $t = -28.33$ years

Hopefully if you can answer this math question, I won't have any more needed reminders on this stuff!

Thanks.



Anonymous 18 hours ago tadpole population is in "thousands". The 10 represents 10000. So your $Q(t)=999$ is incorrect. You are attempting to calculate when the tadpole population is $999*1000$, far in the future!. Your equations look good except for $Q(t)=999$. You should be OK after that.



Karen West Just now Thank you for your patient help -- appreciated!