Question 3

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3. Yellowstone National Park began a project to restore its native wolf population in the mid 1990's. Below are the number of wolves soon after the start of the project:

Year	Years since Project Began	Number of Wolves
1996	1	25
1998	3	45

problem

1/1 point (graded)

3a. Researchers fit a linear model to the wolf data. Using this model, how many wolves were being added to the park each year? *(Round to a whole number.)*

10 ✔

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problem

1/1 point (graded)

3b. According to their linear model, what was the size of the original wolf population when the project began?

15 ✔

15

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problem

1/1 point (graded)

3c. Another researcher assumed that the wolves would experience exponential growth because there were no predators. He fit an exponential model to this data. What is the **growth factor** for this model? *(Round to 2 decimal places.)*

1.34 ✔

1.34

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problem

1/1 point (graded)

3d. What is the annual **growth rate** of these wolves each year, according to this model? *(Report as a proportion rounded to 2 decimal places.)*

0.34 ✔

0.34

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problem

1/1 point (graded)

3e. Assuming exponential growth, find the initial number of wolves when the project began. Use your rounded answer from the previous question. *(Round to a whole number.)*

19 ✔

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✔ Correct (1/1 point)

problem

1/1 point (graded)

3f. By 2002, there were 147 wolves in Yellowstone Park. Which model was determined to fit the data better?

- (•) Exponential ✔
- ( ) Linear
- ( ) Neither model appears to fit well

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✔ Correct (1/1 point)

problem

1/1 point (graded)

3g. Using the best-fitting model, how many years must pass before there are **more than** 325 wolves in Yellowstone? *(Round to a whole number.)*

10 ✔

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✔ Correct (1/1 point)