

Growth of a bacterial culture

A bacteria culture starts with 800 bacteria. Two hours later there are 1400 bacteria.
How many bacteria will there be after two days?

① $y = A \cdot b^x$

Choose a model form

Use data to find parameters

② $800 = A \cdot b^0 \Rightarrow A = 800$

$y = 800 \cdot b^x$

$1400 = 800 \cdot b^2 \Rightarrow \frac{1400}{800} = b^2$

$\sqrt{\frac{1400}{800}} = b$

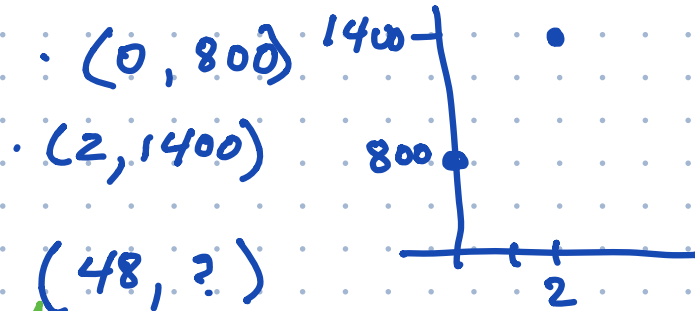
$b = 1.32287...$

③ Use model

$y = 800 \cdot 1.32287^x$

$y = 800 \cdot 1.32287^{48}$

$= 544,506,609$



GUESSES

- 35,000
- 85,000
- 140,000
- 100,000
- 65,000
- 75,000
- 78,000
- 95,000
- 44,000
- 53,000
- 153,000
- 200,000
- 210,000
- 680,000
- 198,000

Linear estimate

15,200

