

Summary: you can start exponential growth problems by using:

$$f(t) = A \cdot e^{kt} \quad (\text{method used in textbook})$$

OR

$$f(t) = A \cdot b^t \quad (\text{Not method used in textbook})$$

You might find that tutors in MLC use both. This is why the explanation.

Finally since we used $f(t) = A e^{kt}$

For this problem in the special assignment, I will start with $f(t) = A \cdot b^t$ where $b = e^k$

	1990	2002	2010
Year	$t=0$	$t=12$	$t=20$
GDP ($\times 10^9$)	100	150	?

$$g(t) = A \cdot b^t$$

$$\text{at } t=0 \quad g(t) = 100$$

$$\Rightarrow 100 = A \cdot b^0 = A \cdot 1 = A \Rightarrow \boxed{A=100}$$

so far

$$g(t) = 100 \cdot b^t, \quad \text{use } t=12 \text{ to find } b.$$

$$\text{at } t=12 \quad g(t) = 150$$

$$150 = 100 b^{12}$$

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