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Assignment

$$y = y_0 e^{kt}$$

$$y = 3y_0 \text{ ; } y = 3$$

A:  $y = e^{kt} = 3$  at  $t = 9$

B:  $y = e^{kt} = 9$  at  $t = 18$

A:  $y_0 = 50$  ... ①  
 B:  $y_0 = 150$  ... ②

$\therefore y = 50e^{kt}$  - ③  
 $y = 150e^{kt}$  - ④

A  $3 = e^{kt}$

$\ln 3 = kt$

$\ln 3 = 9k$

$k = \frac{\ln 3}{9}$

$k = 0.122$

B  $9 = e^{kt}$

$\ln 9 = kt$

$\ln 9 = 18k$

$k = \frac{\ln 9}{18}$

$k = 0.122$

$\therefore y = 50e^{0.122t}$  - A  
 $y = 150e^{0.122t}$  - B

$t = 0, 1, 15$

$A(t) = 50 \exp(0.122 t)$

A(t) =	50
	56.488
	63.817
	72.098
	81.453
	92.022
	103.962
	117.451
	132.691
	149.908
	169.359
	191.334
	216.161
	244.209
	275.896
	311.694

$B(t) = 150 \exp(0.122 t)$

B(t) =	150
	169.463
	191.452
	216.293
	244.358
	276.065
	311.885
	352.354
	398.073
	449.725
	508.078
	574.003
	648.483
	732.626
	827.687
	935.083

