

Obi-Obuoha Abiamamela  
18/ENG05/040  
Mechatronics ENGINEERING

Obi-Obuoha Abiamamela  
 18/ENG05/040  
 MECHATRONICS ENGINEERING

When  $t = 9$ ,  $y = 3y_0$

$$y = y_0 \cdot 3^{kt}$$

$$3 = 3^{kt}$$

$$kt = 1$$

therefore,

$$k = 1/9$$

Therefore,

at  $y_0 = 50$

$$y(t) = 50 \cdot 3^{t/9}$$

$$y_0 = 150,$$

$$g(t) = 150 \cdot 3^{t/9}$$

t := 1..15

t -	Y(t) -	g(t) -
1	56.492	169.475
2	63.826	191.478
3	72.112	216.337
4	81.475	244.425
5	92.053	276.159
6	104.004	312.013
7	117.507	352.521
8	132.763	398.29
9	150	450
10	169.475	508.424
11	191.478	574.433
12	216.337	649.012
13	244.425	733.274
14	276.159	828.476
15	312.013	936.038

$$y(t) := 50 \cdot 3^{\frac{t}{9}}$$

$$g(t) := 150 \cdot 3^{\frac{t}{9}}$$

