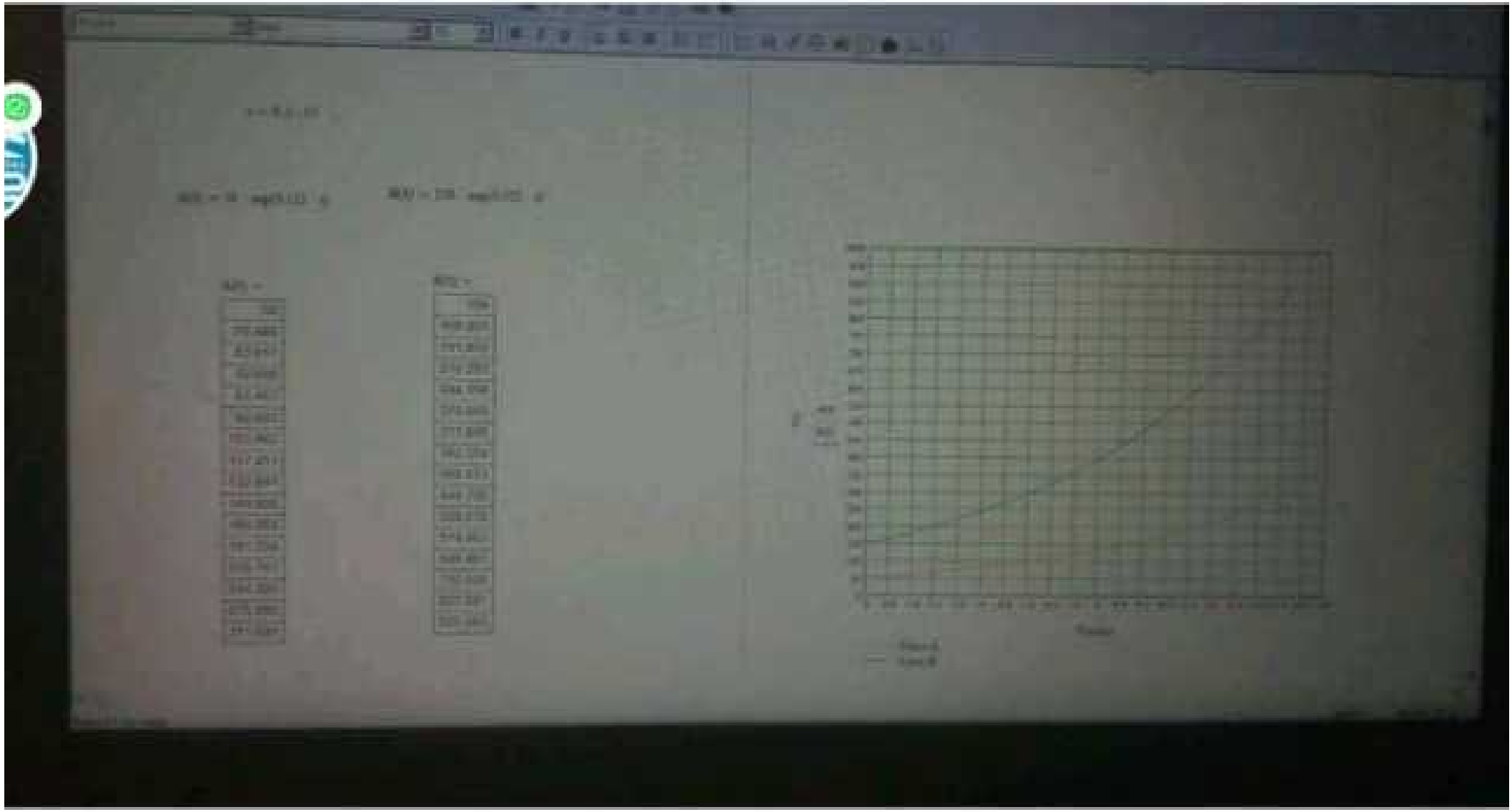

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1. $y = y_0 e^{kt}$

$y = 3y_0 = y/y_0 = 3$

(a) $y/y_0 = e^{kt} = 3$ at $t = 9$

(b) $y/y_0 = e^{kt} = 9$ at $t = 18$

a: $y_0 = 50$ --- (i)

b: $y_0 = 150$ --- (ii)

$50y = 50e^{kt}$ --- (iii)

$y = 150e^{kt}$ --- (iv)

$\ln 3 = kt$

$\ln 3 = 9k$

$k = \frac{\ln 3}{9} = 0.122$

$9 = e^{kt}$

$\ln 9 = 18k$

$\ln 9/18 = k$

$k = 0.1223$, $y = 50e^{0.122t}$

$\therefore y = 150e^{0.122t}$