NE-STEP

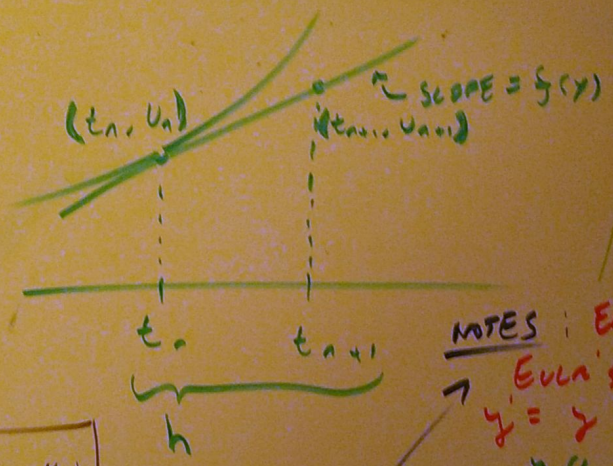
EULER(!)'s ...

SOLVE:

$y' = 2y, \; y(0) = 1$

BY EULER'S METHOD

→ NOTES → $y' = f(y)$



WE DERIVED ... FINITE DIFFERENCE FORM

$$u_{n+1} = u_n + h f(u_n), \; ; \; u_0 = y_0$$

$y(t_n)$: EXCT SOLN ← 'PERFECT'

$u_n \approx y(t_n)$

← APPROX ← 'IMPERFECT'

ONE WOULD IMPLEMENT EULER'S METHOD TO SOLVE,

$y' = 2y \; ; \; y(0) = 1$

BY, ...?

→ $u_{n+1} = y(t_n) + h f(y(t_n))$?

NOTES: EXAMPLE OF EULR'S METH:

$y' = y \; ; \; y(0) = 1$

$y(t_n) = e^{t_n}$

$y(t) = e^t$

'IN THIS CASE, $f(y) = y$'

SUPPOSE ... (CLEAR WHITE BOARD THEN CONT.)

E ...

$= x^3$