Or approximate $y(1)$ using $h = .2 = 1/5$

n	0	1	2	3	4	5
x_n	0	.2	.4	.6	.8	1.0
y_n	1	1.2	1.48	1.856	2.347	$\boxed{2.976}$
$h \cdot f(x_n, y_n)$	.2	.28	.376	.491	.629	

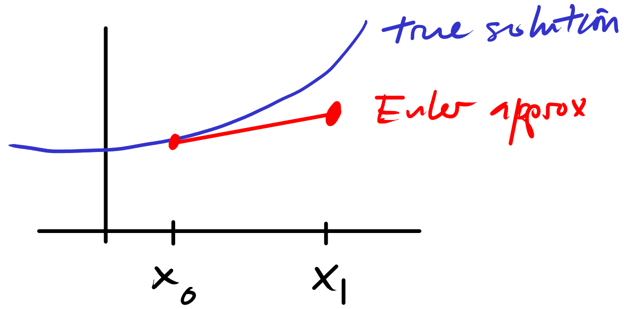
rounding here

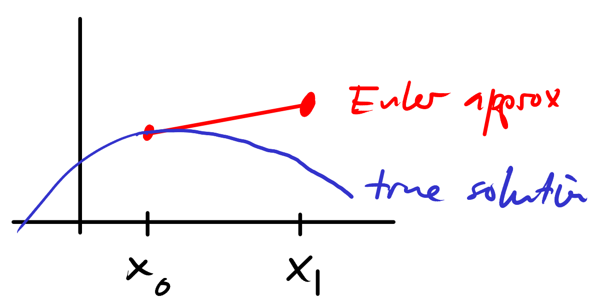
$y(1) \approx 2.976$

[vs. $y(1) \approx 3$ from before]

different step sizes will give different answers.
Smaller step size and more steps leads to better approximations.
[Though, extremely small step size leads to challenges with representing high precision arithmetic on the computer.]

Error analysis: Like any approximate method, Euler's method introduces errors.





True solution concave up
$\Rightarrow$ Euler approximation is an underestimate

True solution concave down
$\Rightarrow$ Euler approximation is an over estimate.

More sophisticated numerical methods exist (e.g. Runge-Kutta) that do better with this.