1d $y' = 2y$, $y(0) = 1 = u_0$

$$u_{n+1} = \frac{h}{2}\left(3f(u_n) - f(u_{n-1})\right) + u_n$$

$$= \frac{h}{2}\left(6u_n - 2u_{n-1}\right) + u_n$$

$f(y) = 2y$, $y = e^{2x}$ EXACT SOLUTION IS e^2

$f(y_{n-1}) = 2y_{n-1} = 2e^2$

$$= \frac{h}{2}\left(6u_n - 2e^2\right) + u_n$$

$h = 0.1$

$$u_1 = \frac{0.1}{2}\left(6 - 2e^2\right) + 1 \approx 0.561094$$

$$u_2 = \frac{0.1}{2}\left(6 \cdot 0.561094 - 2\right) + 0.561094 \approx 0.629422$$