HW 2

4 — $f(x) = 27x^4 + 162x^3 - 180x^2 + 62x - 7$

HAS ZERO @ $x = \frac{1}{3}$

DO 10 NEWT ITS

$P_0 = x_0 = \emptyset$

~~$f(x) = x$~~

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

$$x_1 = x_0 - \frac{f(x_0)}{f'(x_0)}$$

$$f'(x) = 110x^3 + 490x^2 - 360x + 62$$

4 — $f(x) = 27x^4 + 162x^3 - 180x^2 + 62x - 7$

$$x_1 = \frac{-7}{62}$$

$$x_2 = -\frac{7}{62} - \frac{27\left(\frac{-7}{62}\right)^4 + 162\left(\frac{-7}{62}\right)^3 - 180\left(\frac{-7}{62}\right)^2 + 62\left(\frac{-7}{62}\right) - 7}{110\left(\frac{-7}{62}\right)^3 + 490\left(\frac{-7}{62}\right)^2 - 360\left(\frac{-7}{62}\right) + 62}$$