5

SECANT METHOD:

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

NEWTON'S METHOD:

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

IS THERE A METHOD TO ANSWER THIS W/O DOING THE ITERATIONS / EVALS DIRECTLY?

$p_0 = -2$, $p_1 = -3$

$f(-3) = (-3)^3 + 2(-3)^2 - 3(-3) - 1$

$= -1$

$f(-2) = -5$

$$x_2 = -3 + \frac{1 \cdot (-3 + 2)}{-1 + 5}$$

$= -3.3$

$$x_3 = -3.3 + \frac{f(-3.3) \cdot (-3.3 + 3)}{f(-3.3) - f(-3)}$$

$f(-3.3) = -5.26$

$$x_3 = -3.3 + \frac{-5.26 \cdot (-0.3)}{-5.26 + 1}$$

$= -0.37$

$$x_4 = -0.37 + \frac{f(-0.37)(-0.37 + 3.3)}{f(-0.37) - f(-3.3)}$$

$f(-0.37) = 0.33$

$$x_4 = -0.37 + \frac{0.33(2.9)}{0.33 + 5.26}$$

$= -0.2$

$$x_5 = -0.2 + \frac{f(-0.2)(-0.2 + 0.37)}{-0.2 + 0.33}$$

$f(-0.2) =$