Oct. 8

Math 418

Quiz 4

1.

root at $-2, 3, 1$

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

$100 = a(10+2)(8^2)(7)$

$100 = 6804a$

$\frac{50}{2} = \frac{3402}{2}a$

$\frac{100}{100} = \frac{6804}{100}a$

$25 = 1701a$

$$\boxed{f(x) = \frac{1701}{25}(x+2)(x-1)^2(x-3)}$$

2.

$$\begin{array}{r|l} & -3x^2+12x-9 \\ \hline x+4 & -3x^3+0x^2+39x-36 \\ & -(-3x^3-12x^2) \\ \hline & 12x^2+39x-36 \\ & -(12x^2+48x) \\ \hline & -9x-36 \\ & -(-9x-36) \\ \hline & 0 \end{array}$$

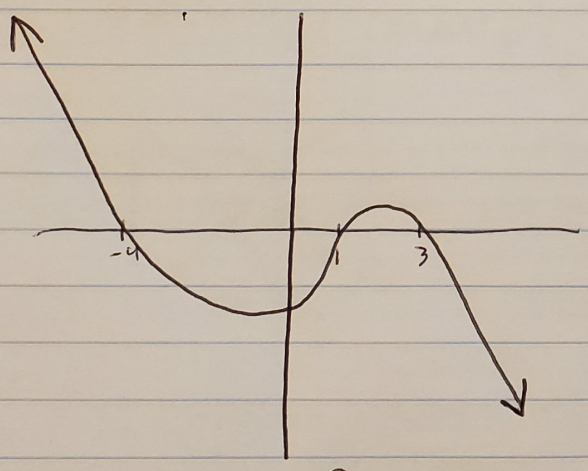
$$\frac{(-3x^2+12x-9)}{-3}$$

$-3(x^2-4x+3)$

$-3(x-3)(x-1)$

$$\boxed{P(x) = -3(x+4)(x-1)(x-3)}$$

3.



as $x \to -\infty, f(x) \to \infty$

as $x \to \infty, f(x) \to -\infty$