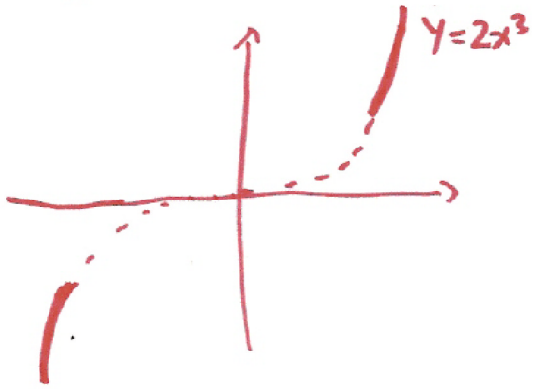
Problem 7: Let $P(x) = (2x+1)(x-2)(x+1)$.

(a) What is the leading term?

WHEN $x \sim \infty$, $P(x) \sim 2x \cdot x \cdot x = 2x^3$



(b) What are the x-intercepts and what is the linear behavior of P near them?

X-INTERCEPTS: $-\frac{1}{2}, 2, -1$

WHEN $x \sim -1$, $P(x) \sim 3(x+1) = 3x+3$

WHEN $x \sim -\frac{1}{2}$, $P(x) \sim -\frac{5}{4}(2x+1) = -\frac{5}{2}x - \frac{5}{4}$

WHEN $x \sim 2$, $P(x) \sim 15(x-2) = 15x - 30$

(c) Sketch the graph of $y = P(x)$.

Y-INTERCEPTS: -2