

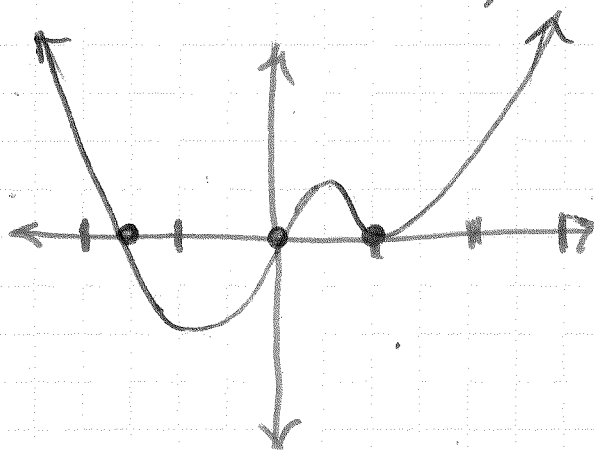
2.2 Graphing a Polynomial Function

Ex. $x(2x+3)(x-1)^2$ ← make sure to acct for exponents!

Leading Term: $2x^4$ 4 zeros, 3 TP

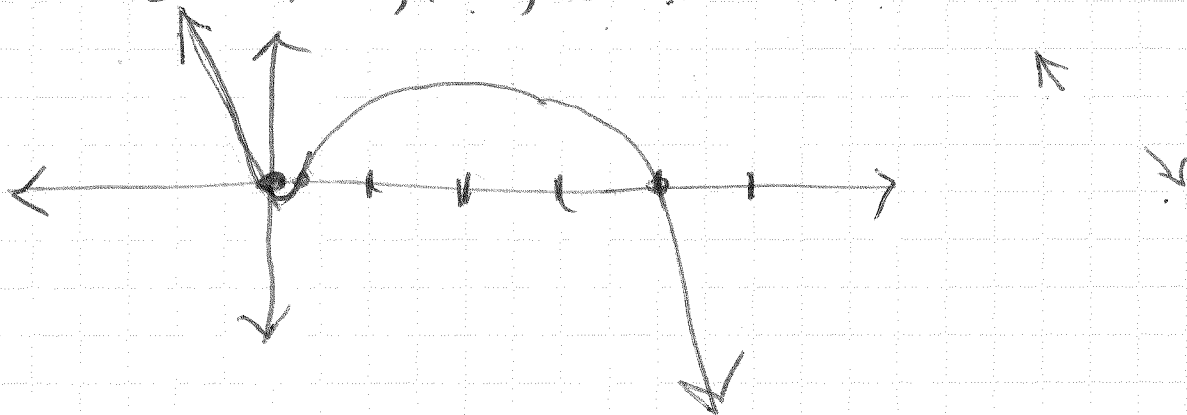
E.g. $\lim_{x \rightarrow -\infty} = \infty$ $\lim_{x \rightarrow \infty} = \infty$ ↑ ↑

zeros: $x=0$, $x=-\frac{3}{2}$, $x=1$ multi of 2



Practice: $-2x(x-4)(3x-1)^3$ sketch graph
($-2x^2(27x^3) = -54x^5$)
L.T: neg & odd zeros: 5, TP: 4

↑
↓ zeros: $x=0$, $x=4$, $x=\frac{1}{3}$ multi of 3



83. degree 4, $\lim_{x \rightarrow -\infty} = \infty$ $\lim_{x \rightarrow +\infty} = \infty$

zeros: $x = -4, x = 1, x = 3$ mult of 2

$$f(x) = a(x+4)(x+1)(x-3)^2 \text{ at } (-3, -9)$$

$$-9 = a(-3+4)(-3+1)(-3-3)^2$$

$$-9 = a(1)(-2)(36)$$

$$1 = a(2)(4)$$

$$a = \frac{1}{8}$$

$$f(x) = \frac{1}{8}(x+4)(x+1)(x-3)^2$$

In-class / HW

104: 36-39, 76, 77, 81, 82, ~~112, 113~~

118: 6, 10-15

Long Division WS