

February 8

GUIDED NOTES: End Behavior, Intervals for Positive and Negative

End Behavior:

left side: $x \rightarrow -\infty$

goes up: $y \rightarrow \infty$

right side: $x \rightarrow \infty$

goes down: $y \rightarrow -\infty$

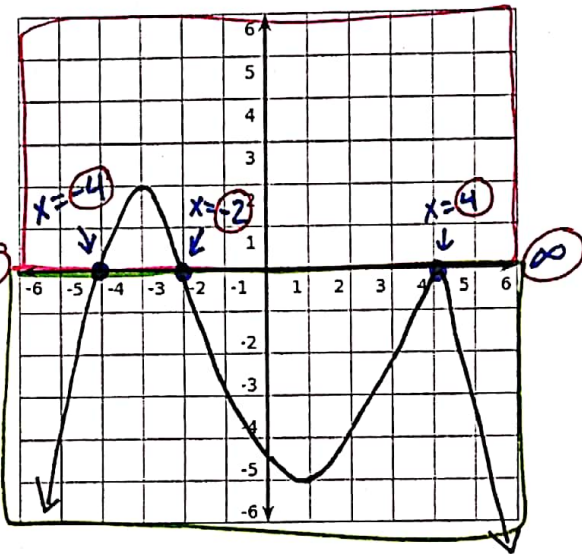
Intervals for Positive/Negative

positive - graph is above x-axis

negative - graph is below x-axis

zeros \rightarrow pos/neg extrema \rightarrow inc/dec

EX1.



zeros: $x = -4$ m:1, $x = -2$ m:1,
 $x = 4$ m:2

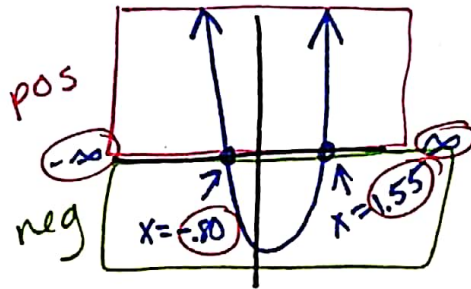
pos: $(-4, -2)$

neg: $(-\infty, -4)$ $(-2, 4)$ $(4, \infty)$

end beh: as $x \rightarrow -\infty$, $y \rightarrow -\infty$
left side goes down

as $x \rightarrow \infty$, $y \rightarrow -\infty$
right side goes down

EX2. $f(x) = 4x^2 - 3x - 5$



2ND TRACE 2: zero

zeros: $x = -0.80$ m:1, $x = 1.55$ m:1

pos: $(-\infty, -0.80)$ $(1.55, \infty)$

neg: $(-0.80, 1.55)$

end beh: as $x \rightarrow -\infty$, $y \rightarrow \infty$
left side goes up

as $x \rightarrow \infty$, $y \rightarrow \infty$
right side goes up