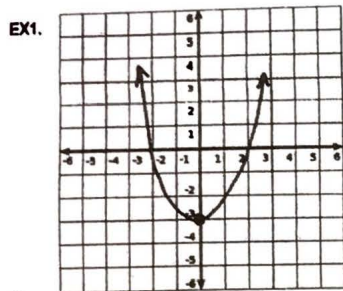


## 2.6 Extrema and Intervals for Increasing/Decreasing

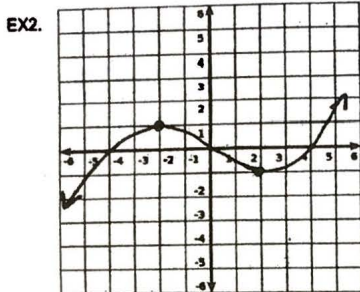
Extrema: "turning" points

absolute minimum/maximum - the absolute lowest/highest point the graph reaches. No other points are higher/lower.

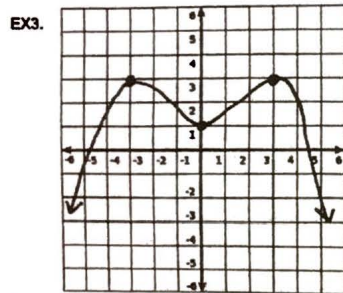
relative minimum/maximum - low/high point in that area. other points else where are higher/lower.



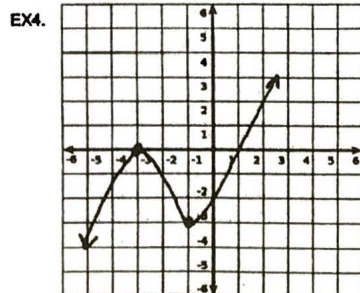
$(0, -3)$ : absolute min



$(-2, 1)$  relative max  
 $(2, -1)$  relative min



$(-3, 3)$ : absolute max  
 $(0, 1)$ : relative min  
 $(3, 3)$ : absolute max



$(-3, 0)$ : relative max  
 $(-1, -3)$ : relative min

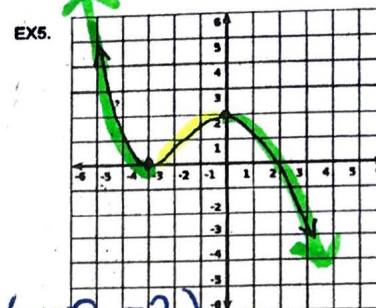
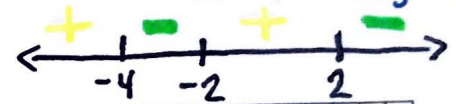
Scanned with CamScanner

### Intervals for Increasing/Decreasing

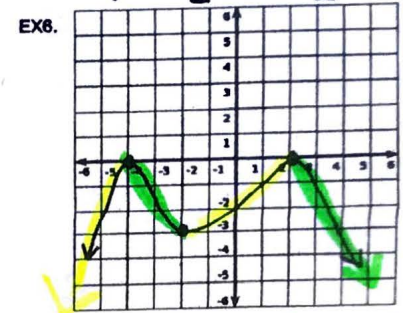
Start by finding the extrema. Use the x-coordinates only to write the intervals! (left  $\rightarrow$  right)

x-values only

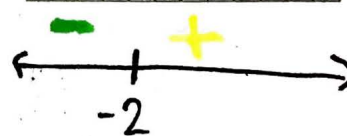
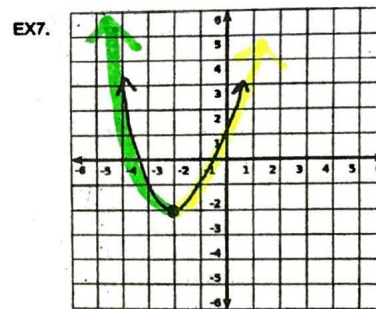
(left  $\rightarrow$  right)



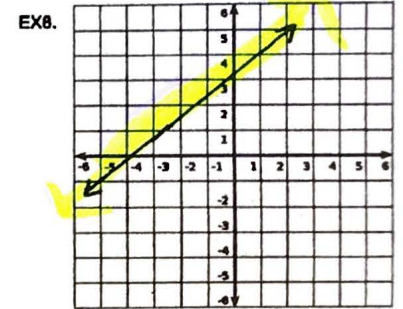
↓:  $(-\infty, -3)$   
 ↑:  $(-3, 0)$



↑:  $(-\infty, -4)$   
 ↓:  $(-4, -2)$   
 ↑:  $(-2, 2)$   
 ↓:  $(2, \infty)$



↓:  $(-\infty, -2)$   
 ↑:  $(-2, \infty)$



↑:  $(-\infty, \infty)$   
 All real #'s

Scanned with CamScanner