

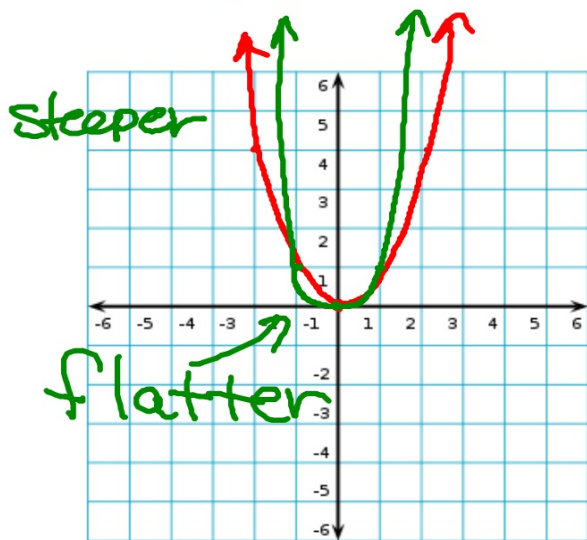
March 6, 2012

Get out page 460 #18-57 x3



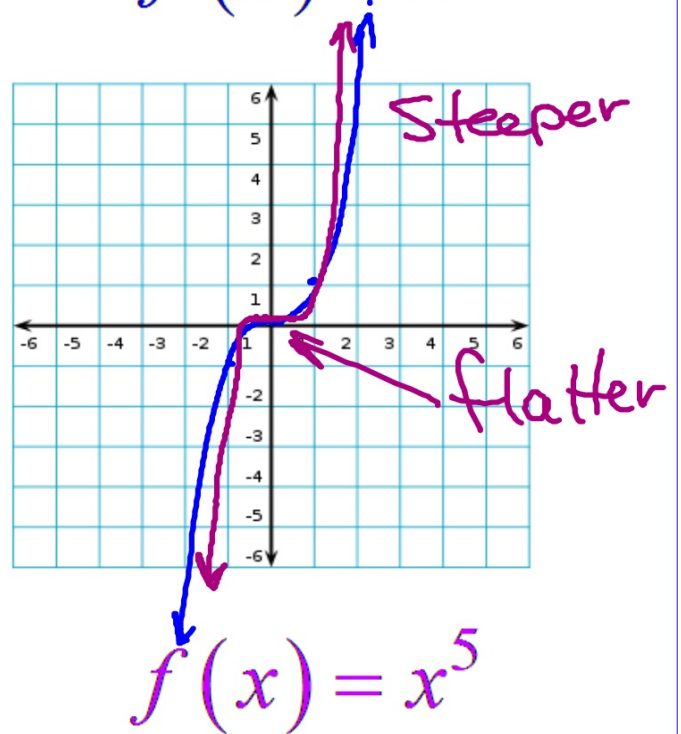
3/6 - Graphs of Polynomial Functions

$$f(x) = x^2$$



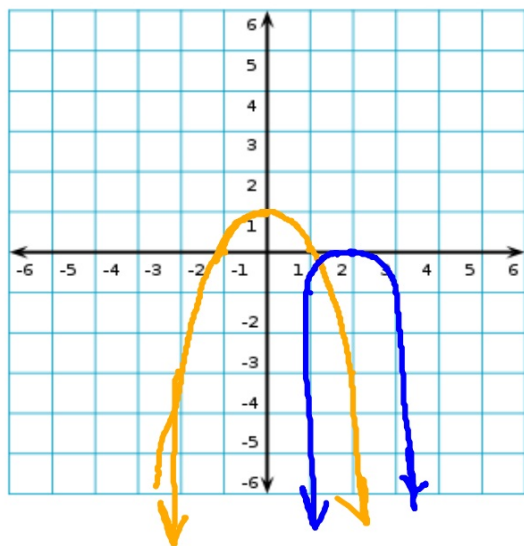
$$f(x) = x^4$$

$$f(x) = x^3$$



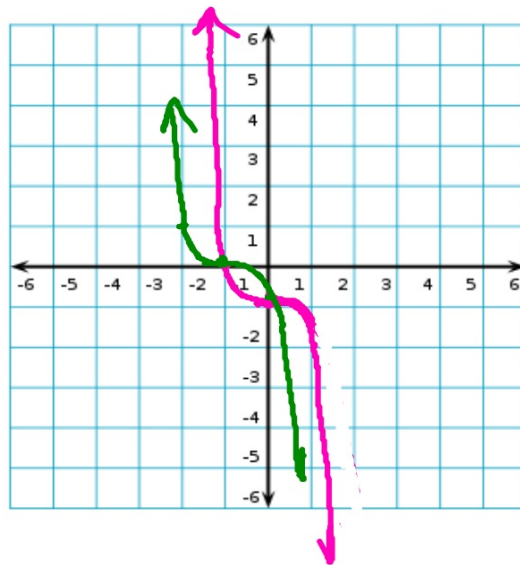
$$f(x) = x^5$$

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



$$f(x) = -(x-2)^4$$

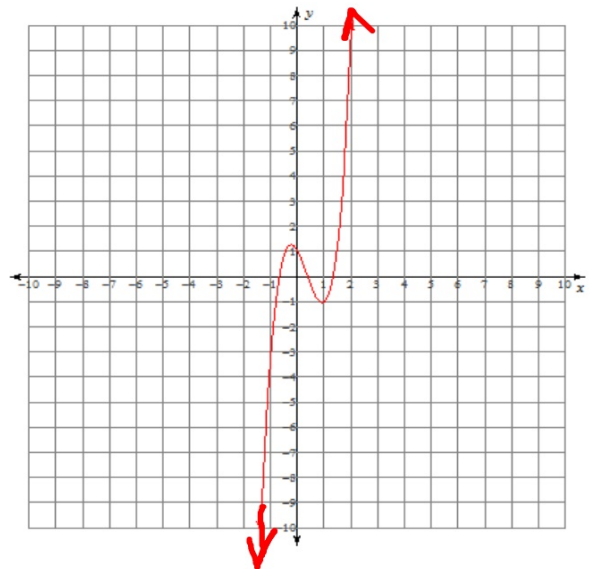
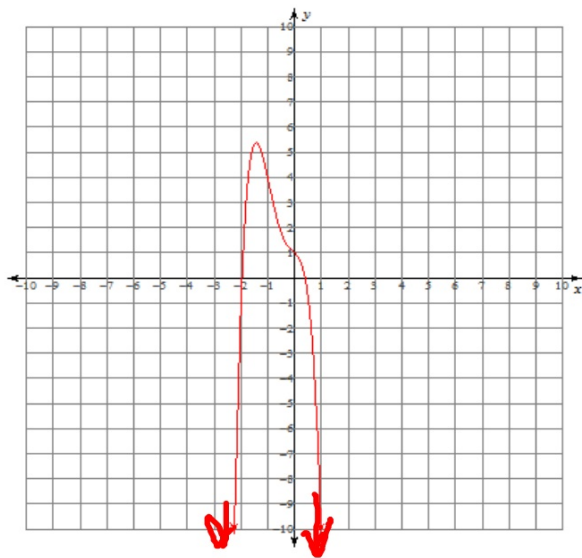
$$f(x) = -x^3 - 1$$



$$f(x) = -(x+1)^5$$

What is "end behavior" in terms of these graphs?

What is happening at the far left and far right of the graphs.



How can you tell without looking at graphs? ...

$$\begin{array}{l}
 f(x) = x^2 + \cancel{8x} + \cancel{13} \quad \uparrow \quad \uparrow \\
 f(x) = -x^5 + 3x^3 + 2 \quad \uparrow \quad \downarrow \\
 f(x) = -x^3 + 2x^2 + 3 \quad \uparrow \quad \downarrow \\
 f(x) = x^4 + 2x^3 - 2x^2 + 5 \quad \uparrow \quad \uparrow \\
 f(x) = x^5 - 3x^3 + 3x + 1 \quad \downarrow \quad \uparrow \\
 f(x) = -x^3 + 3x^2 + 1 \quad \uparrow \quad \downarrow \\
 f(x) = -x^4 + 2x^2 - x + 3 \quad \downarrow \quad \downarrow
 \end{array}$$

"Even" graphs are either $\uparrow\uparrow$ or $\downarrow\downarrow$
+ -

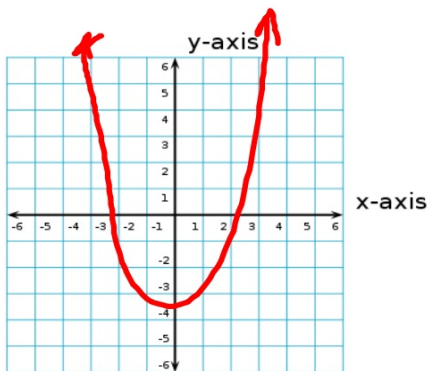
"Odd" graphs are either $\uparrow\downarrow$ or $\downarrow\uparrow$
- +

State the maximum number of turns in the graph.

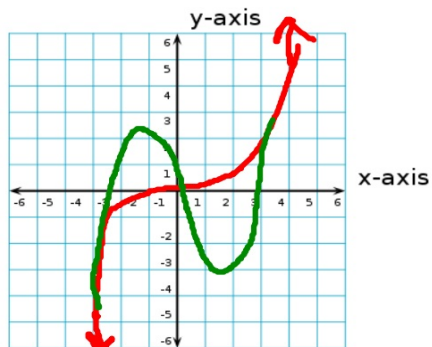
$$f(x) = x^{\textcircled{2}} + \dots$$

$$f(x) = x^{\textcircled{3}} + \dots$$

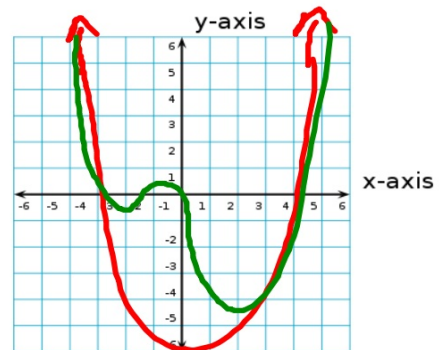
$$f(x) = x^4 + \dots$$



1 max



2 max
0 possible

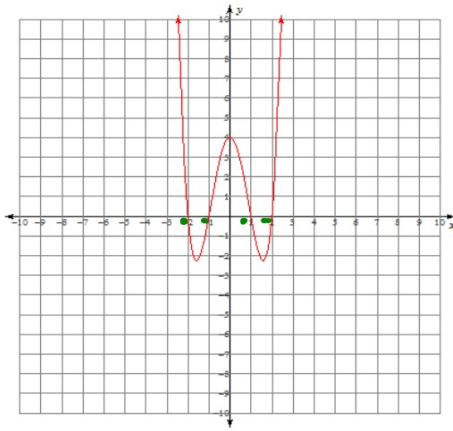


3 max
1 possible

Estimate the graph as much as possible with the info you know.

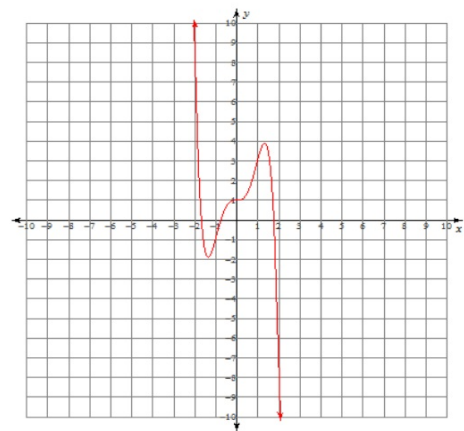
$$f(x) = x^4 - 5x^2 + 4$$

$\uparrow \uparrow$
 3 max turns
 flatter/steeper
 $f(0) = 4$



$$f(x) = -x^5 + 3x^3 + 1$$

flatter/steeper
 4 turns max
 flip $\uparrow \downarrow$
 $f(0) = 1$



Homework

Page 467 #11-48 all

Due **Thursday**
