

$$f(x) = 0.001 (x-4)^3 (x-1) (x+3)^2$$

IN NUMERICAL ORDER, THE ZEROS ARE

$$x = -3, \text{ multiplicity } 2$$

$$x = 1, \text{ multiplicity } 1$$

$$x = 4, \text{ multiplicity } 3$$

AT  $x = -3$ , THE GRAPH FLATTENS AND BOUNCES OFF THE X-AXIS.

AT  $x = 1$ , THE GRAPH PASSES STRAIGHT THROUGH THE X-AXIS.

AT  $x = 4$ , THE GRAPH FLATTENS AND PASSES THROUGH THE X-AXIS.

$$\begin{aligned} \text{THE LEADING TERM OF } f \text{ IS } & 0.001 x^3 x x^2 \\ & = 0.001 x^6 \end{aligned}$$

EVEN DEGREE & POSITIVE  
LEADING COEFFICIENT

$\Rightarrow$  GRAPH GOES  
UP ON BOTH  
ENDS.