NOTES

Algebra 2 Name

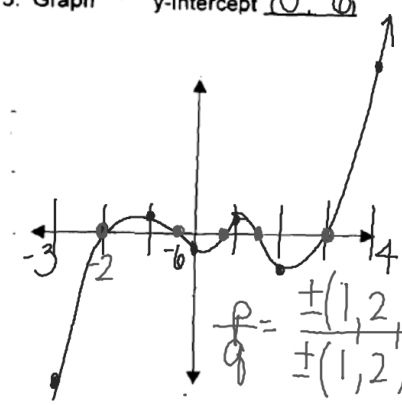
Find all zeros of the function $f(x)=4x^5-9x^4-22x^3+34x^2+17x-6$

1. Total number of zeros 5

2. Upper Bound 4 Lower Bound -3

	x	4	−9	−22	34	17	−6
	1	4	−5	−27	7	24	; 18
	2	4	−1	−24	−14	−11	; −28
zero	3	4	3	−13	−5	2	; 0 ✓
U.B.	4	4	7	6	58	249	; 990
	−1	4	−13	−9	43	−26	; 20
zero	−2	4	−17	12	10	−3	; 0 ✓
L.B.	−3	4	−21	41	−89	284	; −858

3. Graph y-intercept (0, −6)



$\frac{p}{q} = \frac{\pm(1,2,3,6)}{\pm(1,2,4)}$

possible rat'l zeros to try:

$\pm\left(\frac{1}{2}, \frac{1}{4}, \frac{3}{4}\right)$

$\frac{3}{2}$,

From $f(x)=4x^4+3x^3-13x^2-5x+2$

3 is a zero

−2	4	3	−13	−5	2
	4	−5	−3	1	0

4. Find the zeros

Zeros: $3, -2, \frac{1}{4}, \frac{1\pm\sqrt{5}}{2}$ 1.6 −.6

$f(x)=4x^3-5x^2-3x+1$ $\frac{p}{q}=\frac{\pm1}{\pm(1,2,4)}$

1/4	4	−5	−3	1
	4	−4	−4	0

$4x^2-4x-4=0$

$x^2-x-1=0$

$x=\frac{1\pm\sqrt{5}}{2}$