Starter # 10

Find the Zeros

1) $f(x) = 3x^3 + 5x^2 - 12x$

Find The End Behavior

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

Oct 11-12:38 PM

53 3, -4, 6

$(x-3)(x+4)(x-6)$

$x^2+4x-3x-12$

$(x^2+x-12)(x-6)$

$x^3-6x^2+x^2-6x-12x+72$

$x^3-5x^2-18x+72$ ☺

Oct 11-1:23 PM

54. -2, 3, -5

$(x+2)(x-3)(x+5)$

$x^2-3x+2x-6$

$(x^2-x-6)(x+5)$

$x^3+5x^2-x^2-5x-6x-30$

$x^3+4x^2-11x-30$ ☺

Oct 11-1:27 PM

64. $P = r - c$

$0.0125x^2+12x-12225-0.0135x^3-60000$

A. 30 peeps, 542 peeps

B. 200, 429

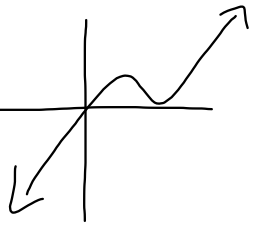
IDK how I did this ☺

Oct 11-1:31 PM

01 C

32 T

D = 3



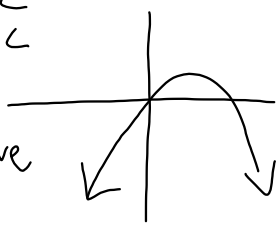
Oct 11-1:39 PM

40 0 3 C

2 1 C

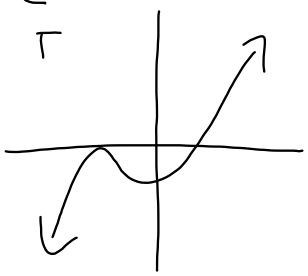
D = 4

- negative



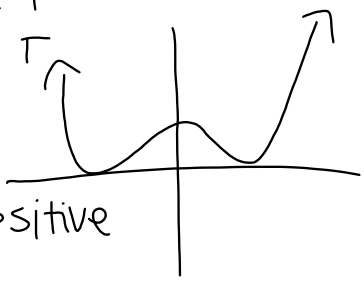
Oct 11-1:40 PM

(41) 1 3 ∪
-2 2 ∩
D = 5



Oct 11-1:41 PM

(42) 3 2 ∩
-5 4 ∩
D = 6
even positive



Oct 11-1:41 PM

Homework Pg 223-225 #'s 7,9,13-28, 30-33, ~~33~~, 35, 37

Oct 11-1:07 PM

2.4

Long Division

Synthetic Division

Factor Theorem

Remainder Theorem

Oct 11-1:08 PM

Long division

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

$$\begin{array}{r} x - 1 \\ x-1 \overline{)\, x^2 - 2x + 3} \\ -(x^2 - x) \\ \hline -x + 3 \\ -(-x + 1) \\ \hline 2 \end{array} \quad r\ 2$$

$x - 1 + \frac{2}{x-1}$

Oct 11-1:46 PM

$$\begin{array}{r} 2x^2 - 5x + 7/2 \\ 2x+1 \overline{)\, 4x^3 - 8x^2 + 2x - 1} \\ -(4x^3 + 2x^2) \\ \hline -10x^2 + 2x \\ -(+10x^2 + 5x) \\ \hline 7x - 1 \\ -(7x + 7/2) \\ \hline -9/2 \end{array}$$

$-\frac{1}{2} - \frac{7}{2}$

$-\frac{2}{2} - \frac{7}{2} = -\frac{9}{2}$

$2x^2 - 5x + \frac{7}{2} - \frac{\frac{9}{2}}{2x+1}$

Oct 11-1:50 PM

$x^2-2x+3 \div x-1$

$x-1=0$ $+1$ $+1$ $x=1$

1	1	-2	3
		1	-1
	1	-1	2

Remainder

$x-1+\frac{2}{x-1}$

Oct 11-1:56 PM

$x^3+4x^2+7x-9 \div x+3$

$x+3=0$ -3 -3

$x=-3$

-3	1	4	7	-9
		-3	-3	-12
	1	1	4	-21

$x^2+x+4-\frac{21}{x+3}$

Oct 11-1:59 PM

Remainder Theorem

$f(c)=r$

remainder is 0 then it's a factor of the function

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

$\div x-1$

$x-1$ not a factor

$x-1=0$ $+1$ $+1$

$x=1$ or $c=1$

$r=1$

$f(1)=(1)^3+(1)^2-2(1)+1$

$1+1-2+1=1$

Oct 11-2:02 PM