Warm up

00:06

NO CALCULATOR

1) Describe the end behavior using limits: $f(x) = \frac{-3}{x-4}$

2) Find the domain of the following rational function:

$$p(x) = \frac{3x+2}{x^2-16}$$

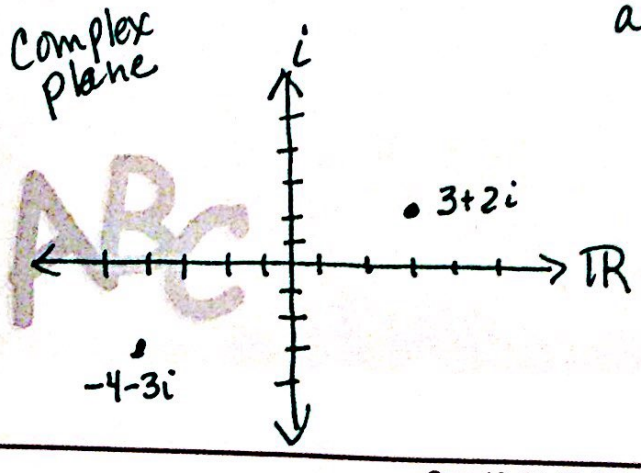
Sep 13-11:48 AM

Fundamental Theorem of Algebra

FTOA - If p(x) is a polynomial of degree "n" then p(x) has at most n complex zeros.

* The number of "turns" or extrema is (n-1).

Complex Zero - all Real and imaginary zeros
$a \pm bi$



Sep 13-12:36 PM

...sooooo if you have an odd polynomial

definitely have atleast 1 positive or neg real solution.

if you have an even polynomial

No guarentee of real solutions.

ABC

Sep 16-7:03 PM

Special Products

Write an equation whose zeros are $-2, -1, 3$

$y = (x+2)(x+1)(x-3)$

zeros: $3, \quad 2+i, \quad 2-i$

$(x-3)\left[(x-(2+i))(x-(2-i))\right]$

$(x-2-i)(x-2+i)$

$x = 2$
$-2 \quad -2$
$x - 2 = 0$

~~Write an equation with 2 Real roots are~~

Give an equation that has roots 3 and $2+i$, $2-i$

$y = (x-3)\boxed{(x-(2+i))(x-(2-i))}$

$(x-3)\boxed{(x-2-i)(x-2+i)}$

	x	-2	$-i$
x	x^2	$-2x$	$-xi$
-2	$-2x$	4	$2i$
i	xi	$-2i$	$-i^2 = 1$

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