WARMUP

1) Download Desmos app on your phone

2) Find all asymptotes for

A) $f(x) = \dfrac{x^2-3x+2}{x^2-4}$

B) $f(x) = \dfrac{x^2-7x+6}{x+3}$

Section 3.5 Rational Functions

Steps to Graphing

STEP 1: Put it on Desmos to get an idea of what it looks like.

STEP 2: Find the domain

STEP 3: Write the function in lowest terms.

STEP 4: Find the x-intercepts by setting the step 3 numerator = 0 and solving for x.
Find the y-intercept by setting $x = 0$.

STEP 5: Locate the V.A.s by setting the step 3 denominator equal to 0

STEP 6: Locate the H.A. or O.A. using steps from yesterday.

STEP 7: Graph it.

STEP 8: Label max and min points. Use Desmos.

ex: $f(x) = \frac{x-1}{x^2-4}$

STEP 1: see Desmos

STEP 2: Domain $x^2-4=0$

$(x+2)(x-2)=0$

$x=-2 \quad x=2$

$D=(-\infty,-2)\cup(-2,2)\cup(2,\infty)$

STEP 3: $f(x)=\frac{x-1}{(x+2)(x-2)}$

STEP 4: x-int: $x-1=0$, $x=1$, $(1,0)$

y-int: $\frac{0-1}{(0+2)(0-2)} = \frac{-1}{-4} = \frac{1}{4}$, $(0,\frac{1}{4})$

STEP 5: V.As. $(x+2)(x-2)=0$

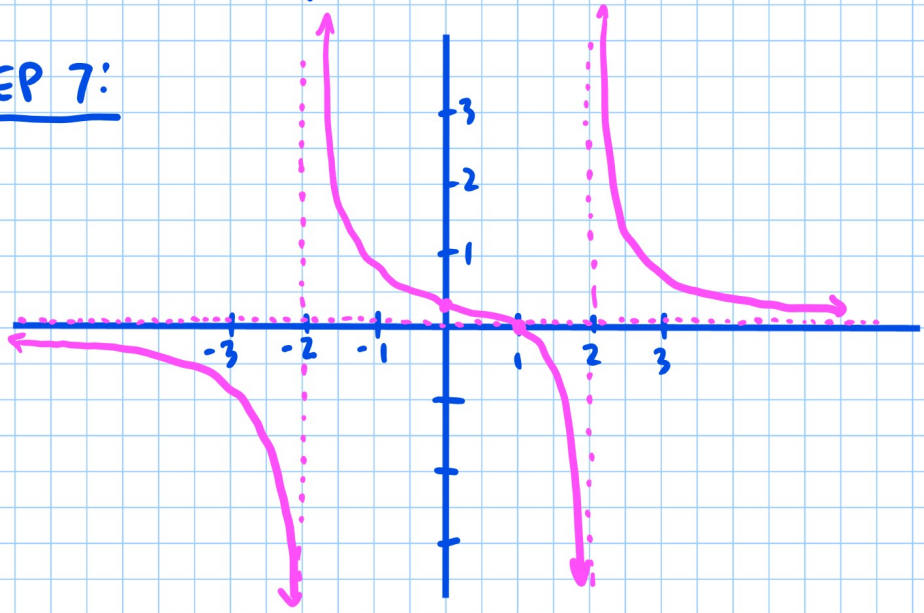
$x=-2 \quad x=2$

STEP 6: deg of top $<$ deg of bot

1 $<$ 2

so $y=0$ is H.A.

STEP 7:



STEP 8: no max or min

Assignment:

Follow eight steps for:

1) $y = \dfrac{x^2 - 3x + 2}{x^2 - 9}$

2) $y = \dfrac{x^2 - 7x + 6}{x + 3}$