Alg 2B /30 Name: Key

Ch 8.2-8.3 Quiz Per:_____ Date:_____ Score: 15

Show all work on these pages and circle your answers. Read the instructions for each set of questions, and have fun ☺

Provide a short description for the following:

1) What is a removable discontinuity? factors common to top & bottom; makes a hole in the graph (3)

2) What is a non-removable discontinuity? values for x that cause a division by zero error (except holes) Makes a vert. asymptote (3)

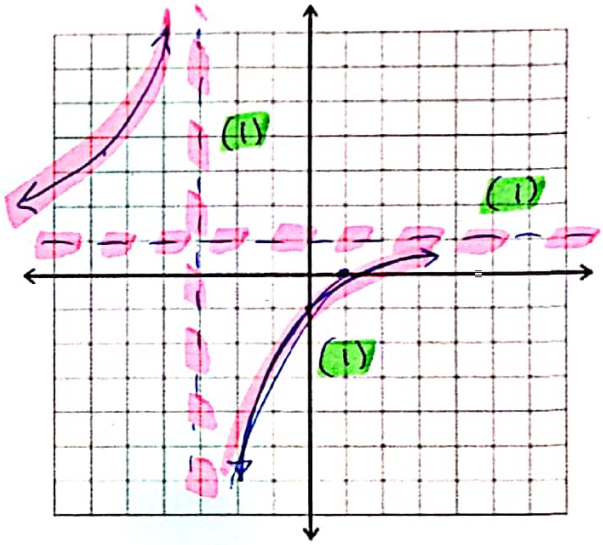
For each of the following find the vertical asymptotes, horizontal asymptotes, and holes if they exist. Sketch the graph.

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

(1) vertical asymptote $x=-3$

(1) horizontal asymptote $y=1$

(1) hole none



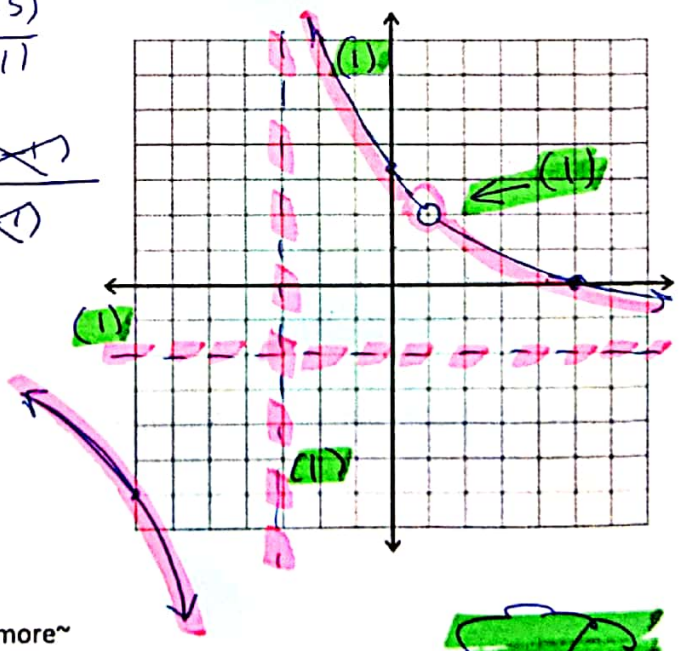
4) $f(x) = \frac{-2x^2+12x-10}{x^2+2x-3}$ $\frac{-2(x^2-6x+5)}{(x+3)(x-1)}$

$\frac{-2(x-5)(x-1)}{(x+3)(x-1)}$

(1) vertical asymptote $x=-3$

(1) horizontal asymptote $y=-2$

(1) hole $x=1, y=2$



~more~

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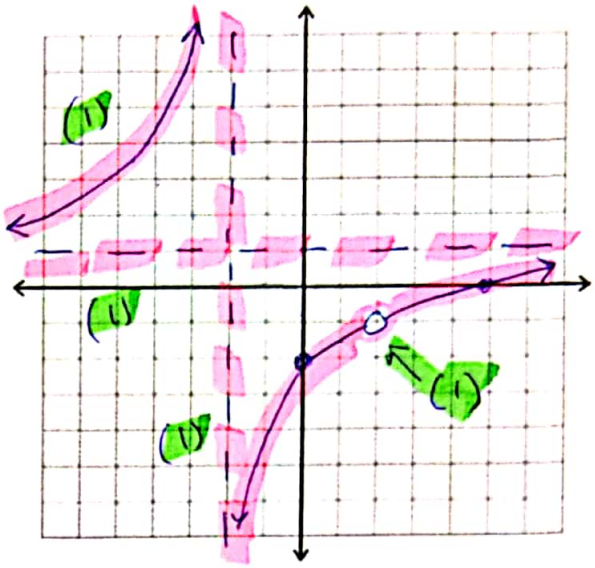
For each of the following find the vertical asymptotes, horizontal asymptotes, and holes if they exist. Sketch the graph. (continued)

5) $f(x) = \frac{x^2-7x+10}{x^2-4}$



(1) vertical asymptote $x=-2$

(1) horizontal asymptote $y=1$

(1) hole $(2, -3/4)$

Give a possible rational function, f(x), that ...

6) ... has a hole at x=3, and a vertical asymptote at x=4 (make one up).

$$f(x) = \frac{2(x-3)}{(x-4)(x-3)}$$

(2) (2)

– sample answer –

~end~

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