DATE: _____

Open the TI-Nspire document *Exploring_Vertical_Asymptotes*.

Move to page 1.2.

1. Use ▲ and ▼ to change the value of "*a*."
    a. Describe the effect it has on the graph.
    b. Why do you think it happens?
2. Use ▲ and ▼ to change the value of "*b*."
    a. Describe the effect it has on the graph.
    b. Why do you think it happens?
3. What happens when the value of "a" and "b" are equal?
4. What are the equations of vertical asymptotes…which are represented by dotted lines on the graph?
5. If a = 2 and b = -5, state the domain of the function in interval notation.
6. Does the value of "c" have an effect on the above question if it's changed? Explain your answer.

Move to page 2.1.

7. Use ▲ and ▼ to change the value of "*c*."
    a. Describe the effect it has on the graph.
    b. Why do you think it happens?
8. Make the value of "a" equal to "c" OR make the value of "b" equal to "c". Either way works for realizing the concept.
    a. Describe what happens to the graph?
    b. Why do you think it happens?
9. Apply these values: b = 2 and c = 2.
    a. State the domain of the function in interval notation.
    b. What affect does the value of "a" have on the graph? Explain your answer.

Move to page 2.2.

10. Answer the question. What is your answer?

Move to page 3.1.

11. If the values of "a" "b" "c" are all different, are there any holes (point of discontinuity) on the graph? Explain your answer.
12. If the values of "a" and "b" are equal OR the values of "a" and "c" are equal, describe the effects on the graph. Explain your answer.
13. If a = -3, b = -3, and c = 2, state the domain of the function in interval notation.

Move to page 3.2.

14. Answer the question. What is your answer?

Close the program. Do NOT save.

15. Describe what you now know about vertical asymptotes and holes (points of discontinuity).
    a. Also, how are vertical asymptotes determined?
    b. Also, how are holes (points of discontinuity) determined?