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PREVIEW

Rational Functions 4-Way Activity

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Rational Functions 4 - Way Activity

In this 4-Way Activity your Algebra 2 or PreCalculus students will work cooperatively in groups of four to analyze a given rational function. Tasks include factoring, finding both x-intercept and y-intercept, horizontal and vertical asymptotes, and the coordinates of the hole. When completed, students are given the task to graph the function.

They will practice using the **Rule of Four** to make connections among these representations. There are two different versions.

What is GNAW and the Rule of Four?

The "Rule of Four" or G.N.A.W. Approach is a method of thinking about mathematics in order to make connections through multiple representations of our mathematical thinking. Students should be able to represent mathematics in graphic, numeric, algebraic, and verbal formats. G.N.A.W.

Why should you use the GNAW approach?

By implementing this process into your classes, students will gain a deeper understanding of the mathematics. The Rule of Four helps students connect and validate concepts and techniques.

How can you use the Rule of Four?

Teachers can model this approach during instructional time to set the "tone" for expected thinking and reasoning. Then, give your students many chances to practice the techniques. It is also important that students learn to make connections between the different representations.

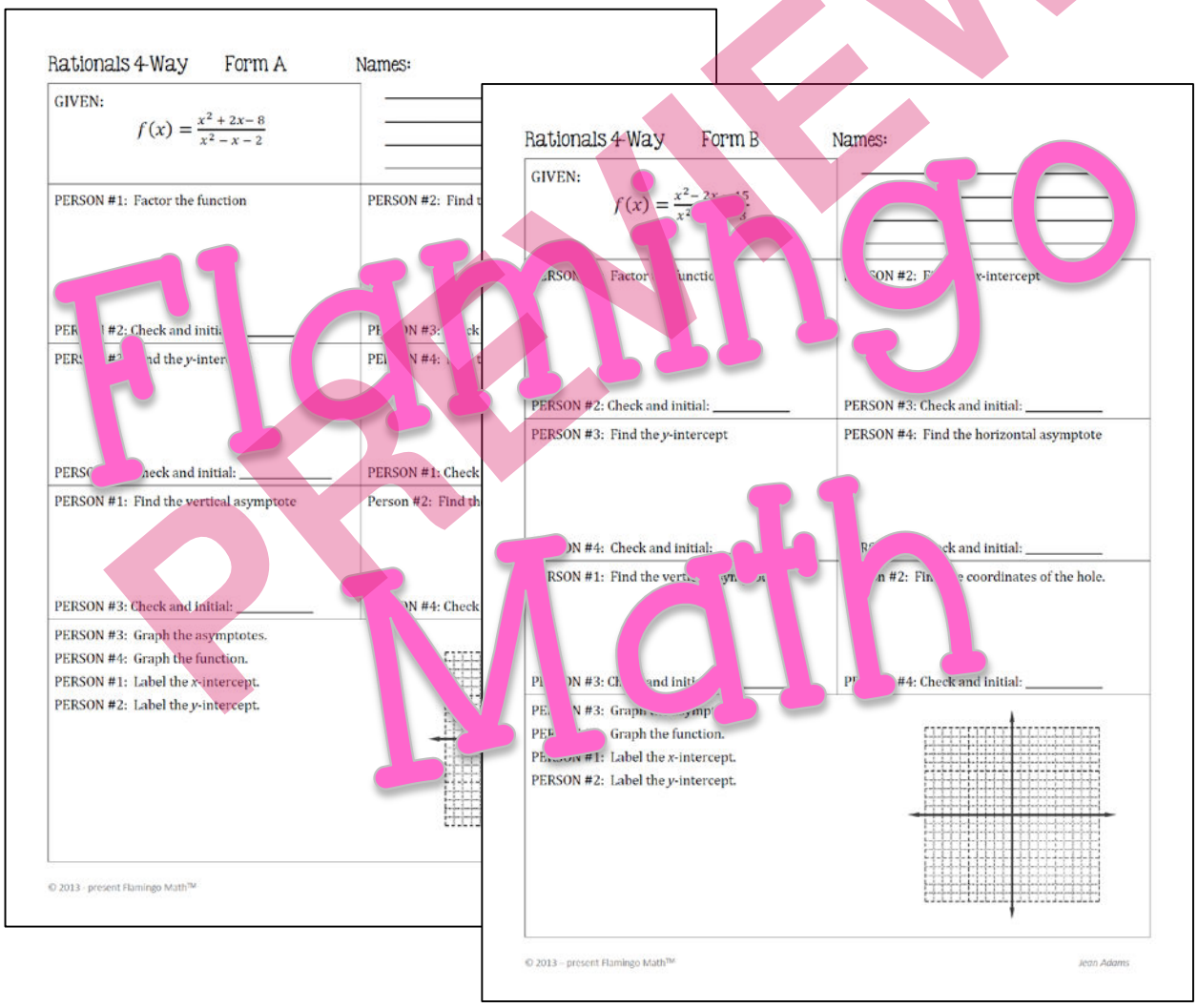
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Rationals 4-Way Activity

Objective: In this 4-Way Activity your Algebra 2 or PreCalculus students will work cooperatively in groups of four to analyze a given rational function. Tasks include factoring, finding both x-intercept and y-intercept, horizontal and vertical asymptotes, and the coordinates of the hole. When completed, students are given the task to graph the function.

Preparation: Copy a form for each group of students. There are two different forms for a group.

Activity: Place students in groups of 4. They should decide who is person #1, #2, #3, and #4. Or have them ranked according to age, birth month, etc. Students work cooperatively to solve their individual prompt to complete the activity. Just as the game of Four Square, students "bounce" through the squares until the group has completed their assigned prompt.



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Rationals 4-Way Form A Names:

GIVEN:

$$f(x) = \frac{x^2 + 2x - 8}{x^2 - x - 2}$$

_____

_____

_____

_____

PERSON #1: Factor the function

PERSON #2: Check and initial: _____

PERSON #2: Find the *x*-intercept

PERSON #3: Check and initial: _____

PERSON #3: Find the *y*-intercept

PERSON #4: Check and initial: _____

PERSON #4: Find the horizontal asymptote

PERSON #1: Check and initial: _____

PERSON #1: Find the vertical asymptote

PERSON #3: Check and initial: _____

Person #2: Find the coordinates of the hole.

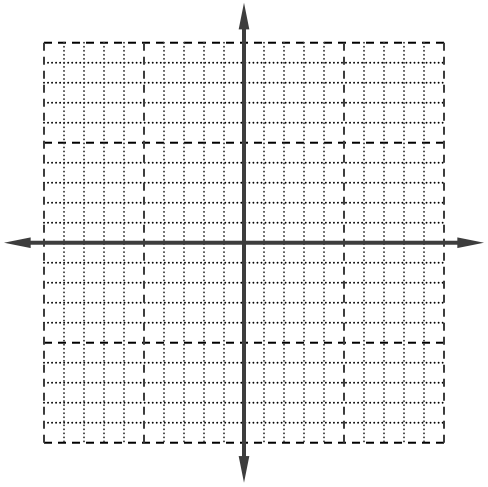
PERSON #4: Check and initial: _____

PERSON #3: Graph the asymptotes.

PERSON #4: Graph the function.

PERSON #1: Label the *x*-intercept.

PERSON #2: Label the *y*-intercept.



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