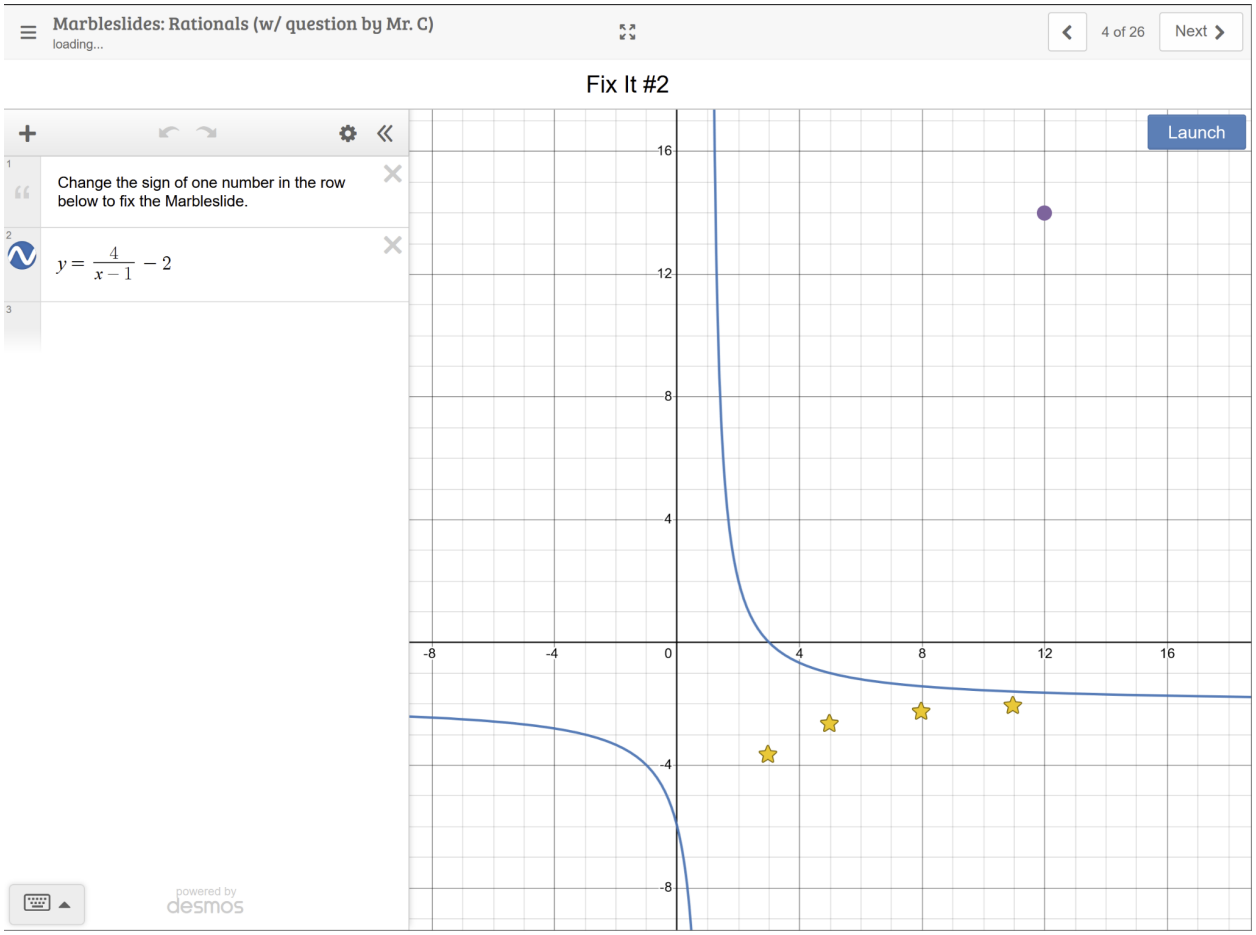
Tim Coulter
edTPA Materials Task 1

Lesson 1 Instructional Materials:

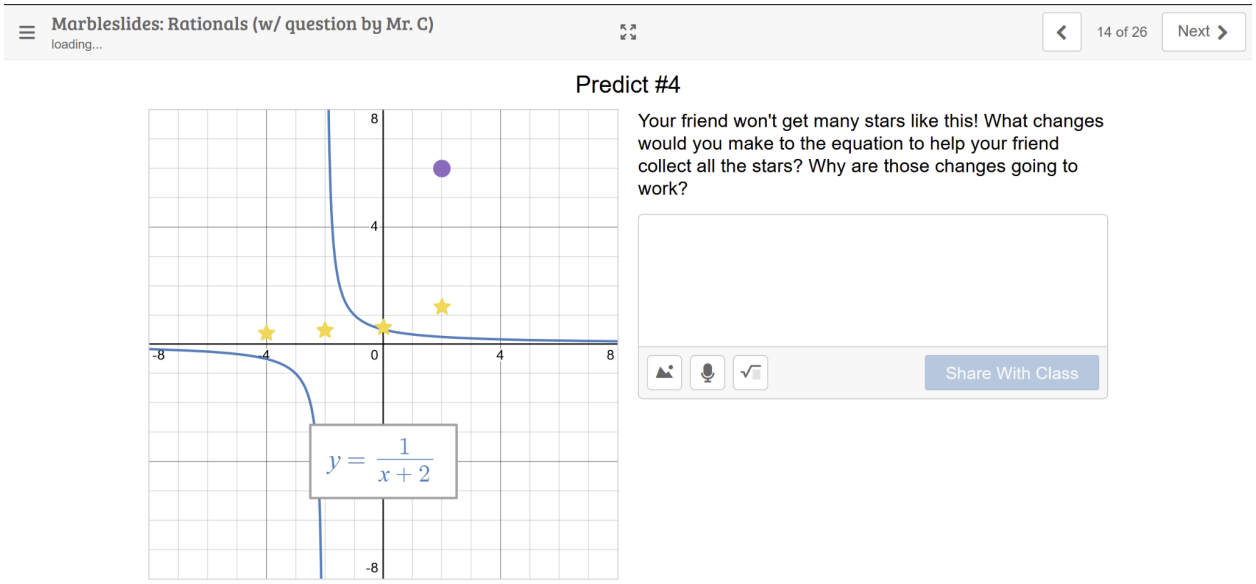
The following are various slides from the Desmos activity I'll give in Lesson 1, where students need to create rational functions to solve problems. Their goal will be to create a rational function of the correct shape such that a marble (shown in purple) can slide down the function and hit all the stars (shown in yellow). This will require students to translate and transform their rational functions until they've made the desired shape. Note that I've only included a few slides that are representative of the whole activity.

Slide 4: Manipulating an existing rational function so that the marble will hit all the stars

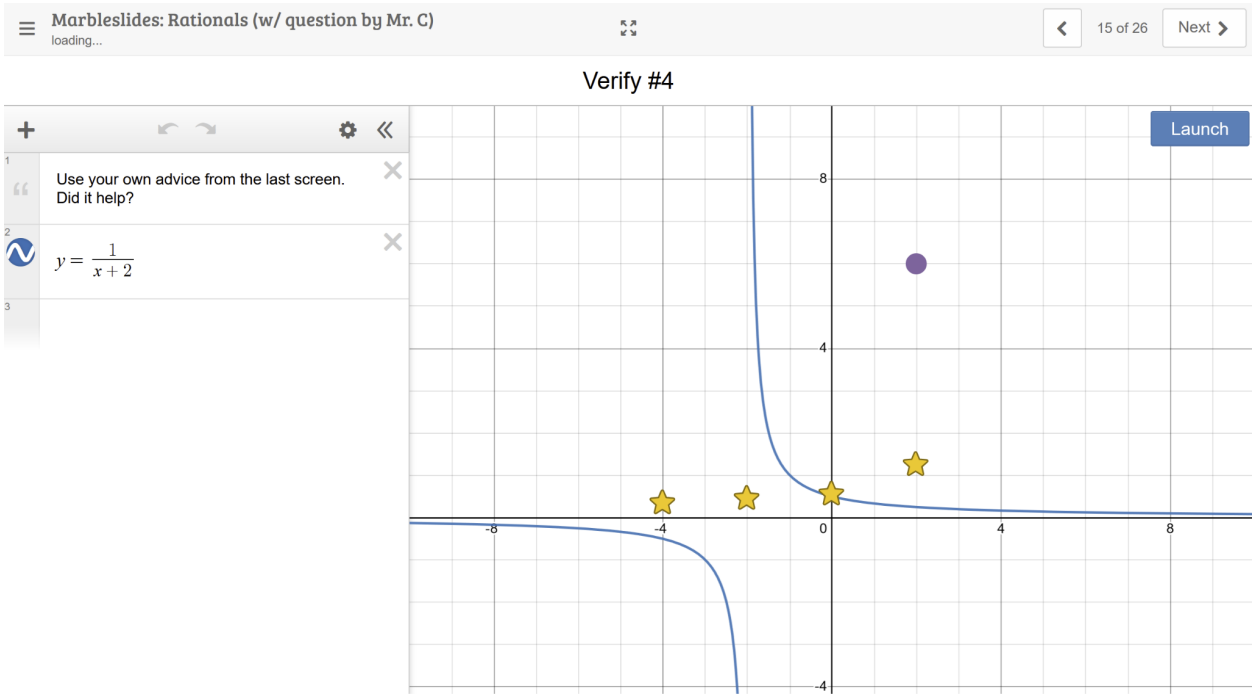


Tim Coulter
edTPA Materials Task 1

Slide 14: Predicting the results of specific transformations of rational functions

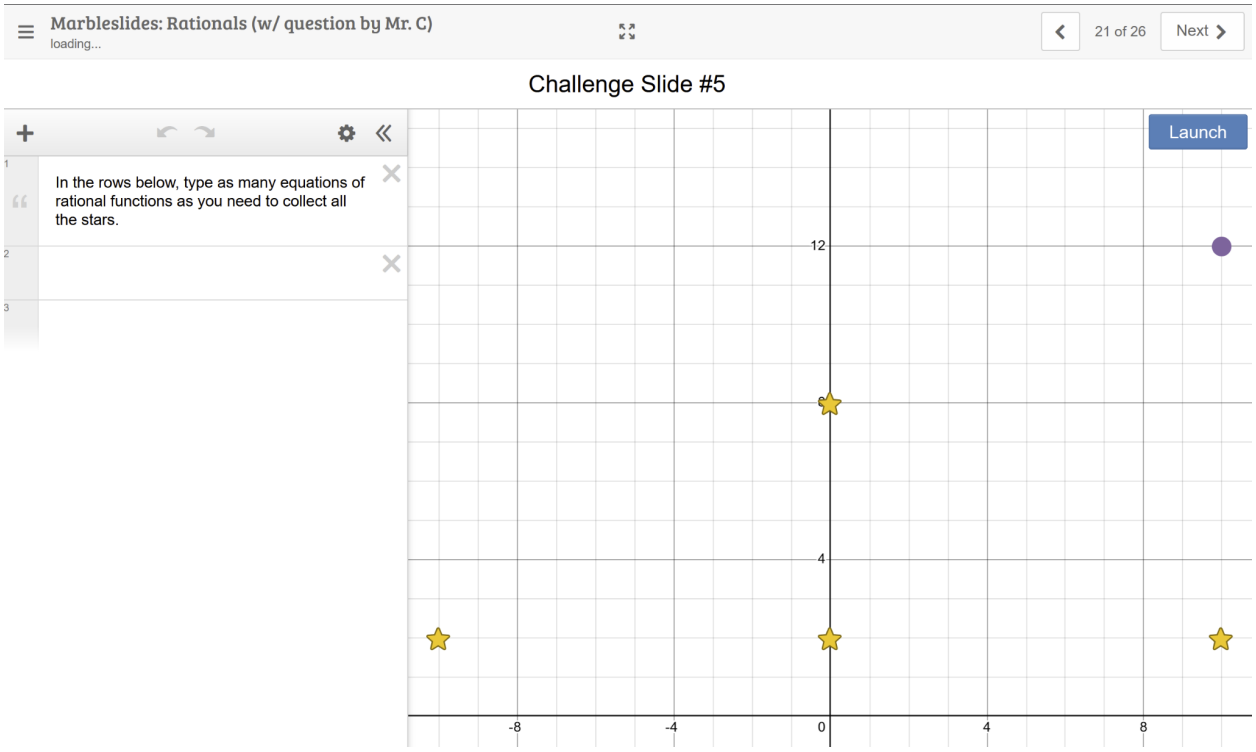


Slide 15: Verifying predictions

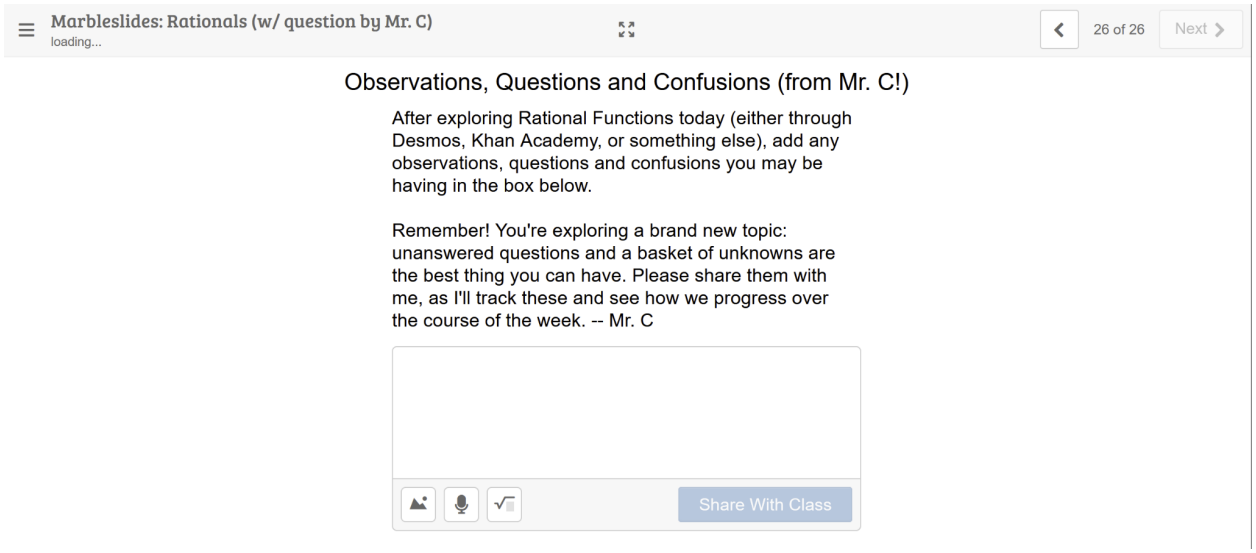


Tim Coulter
edTPA Materials Task 1

Slide 21: Freeform challenge constructing a rational function from scratch



Slide 26: Opportunity to share observations, questions and confusions

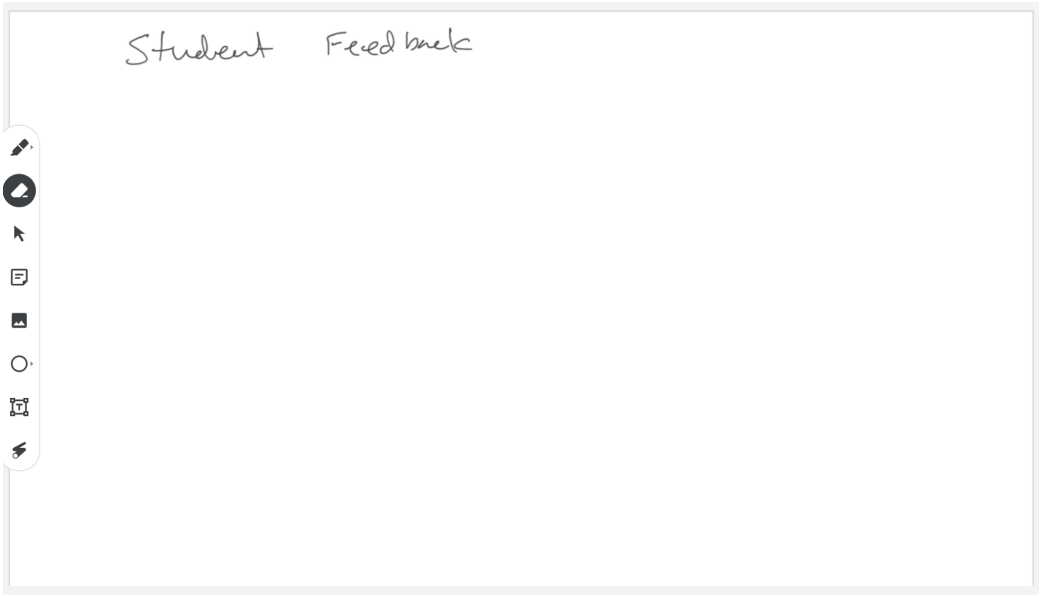


Tim Coulter
edTPA Materials Task 1

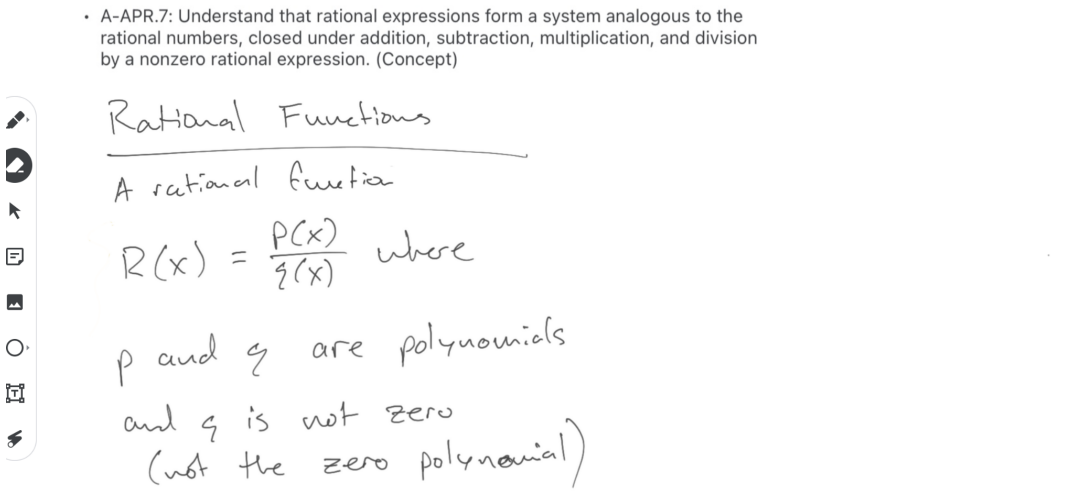
Lesson 2 Instructional Materials:

In lesson 2, I'll give students direct instruction on rational functions. I created an unfinished set of slides that I'll use to help guide my note-taking activity, which I will fill in with more detail during instruction. I've included the slides below.

Note-taking Slide 1: Student feedback from Lesson 1. This slide is intentionally empty. I will fill in this slide after lesson 1 is complete, and use this as a jumping off point for lesson 2.

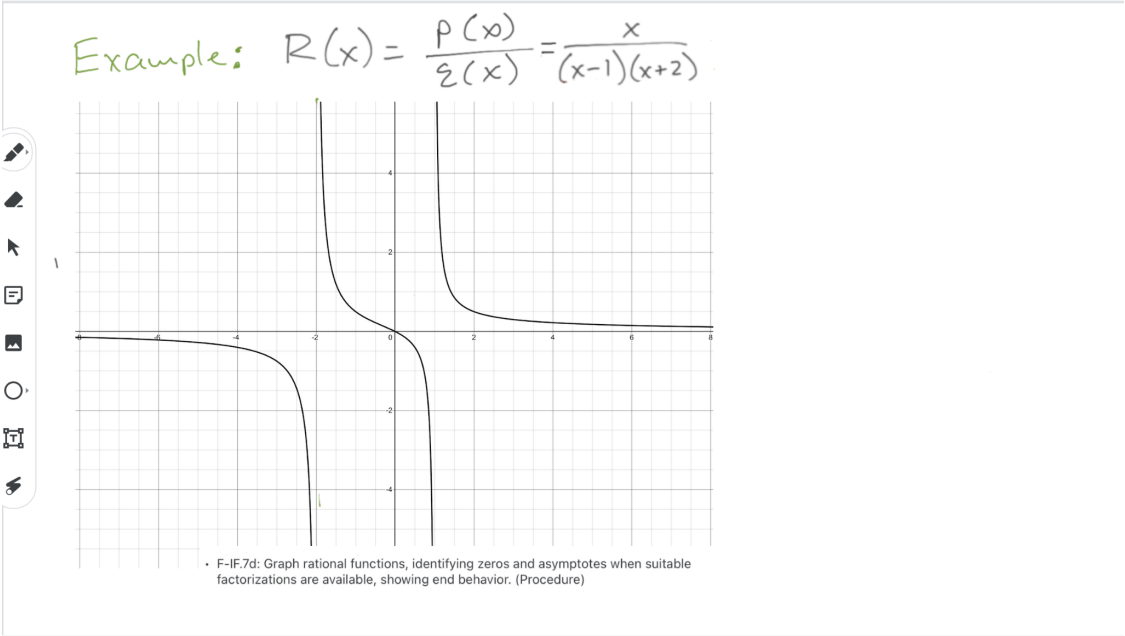


Note-taking Slide 2: Definition of a rational function. I plan to use the empty space to show examples and talk about specific functions.

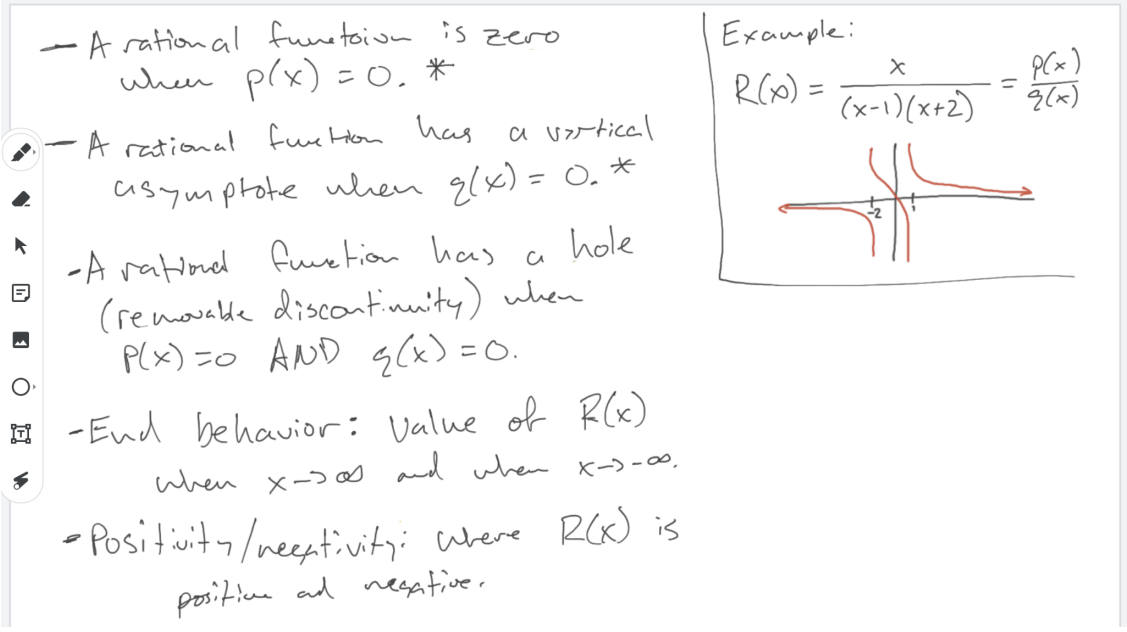


Tim Coulter
edTPA Materials Task 1

Note-taking Slide 3: Example rational function. I'll use this example throughout the instruction, and use the empty space on this slide to compute properties of this specific function.

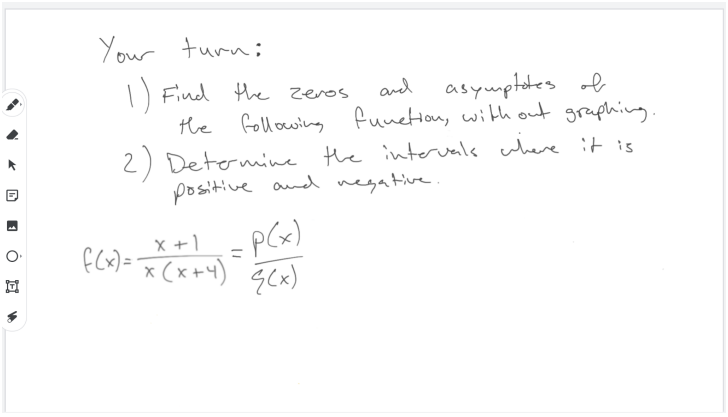


Note-taking Slide 4: Definition of specific properties of rational functions.

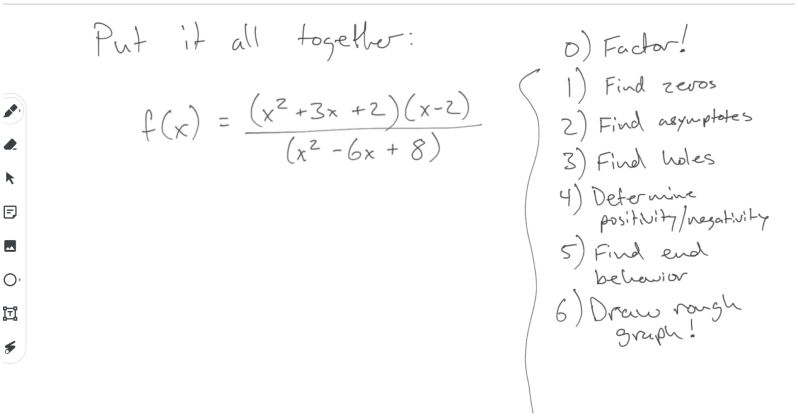


Tim Coulter
edTPA Materials Task 1

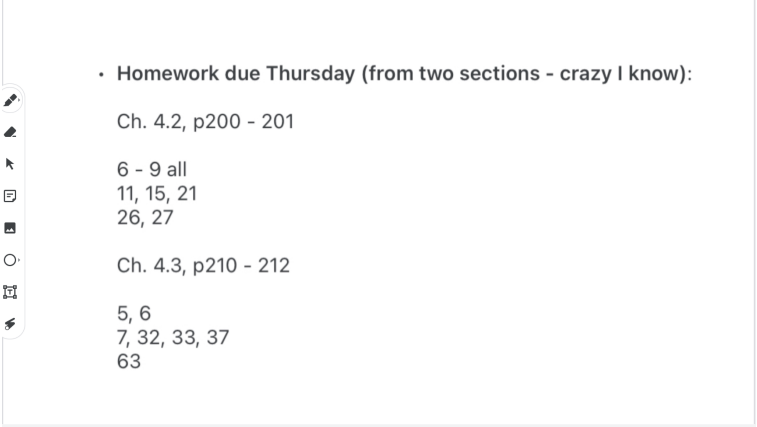
Note-taking Slide 5: In-class activity, giving students a chance to apply what they have learned.



Note-taking Slide 6: Displaying the process of drawing a rough graph of rational functions.



Note-taking Slide 7: Homework assignment, due at the beginning of Lesson 3.



Tim Coulter
edTPA Materials Task 1

Lesson 3 Instructional Materials:

Lesson 3 consists of an in-class lab activity guided by a worksheet. See the worksheet on the following pages. Please note that I've included the KEY pages for the activity, though some were omitted to ensure proper page count.

Students used meter sticks, small mirrors, wood blocks, laser pointers and masking tape to complete this assignment, creating a lab setup similar to the image below.