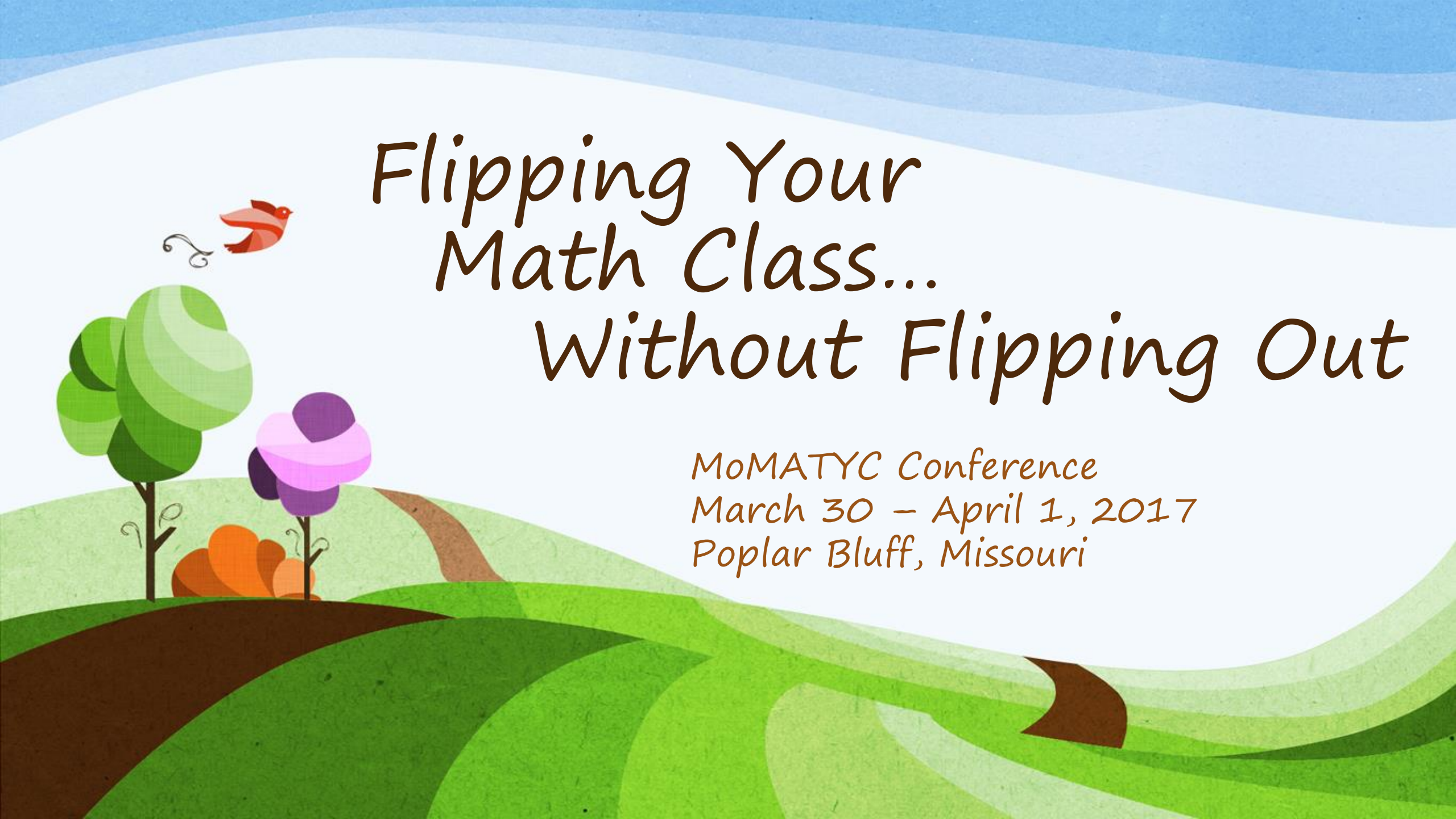


Flipping Your Math Class... Without Flipping Out

MoMATYC Conference
March 30 – April 1, 2017
Poplar Bluff, Missouri


Part 1
What is “Flipping”

What is a "Flipped Classroom" ?

Here is How Google answered:

*The **flipped classroom** is a pedagogical model in which the typical lecture and homework elements of a course are reversed.*

Short video lectures are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions.

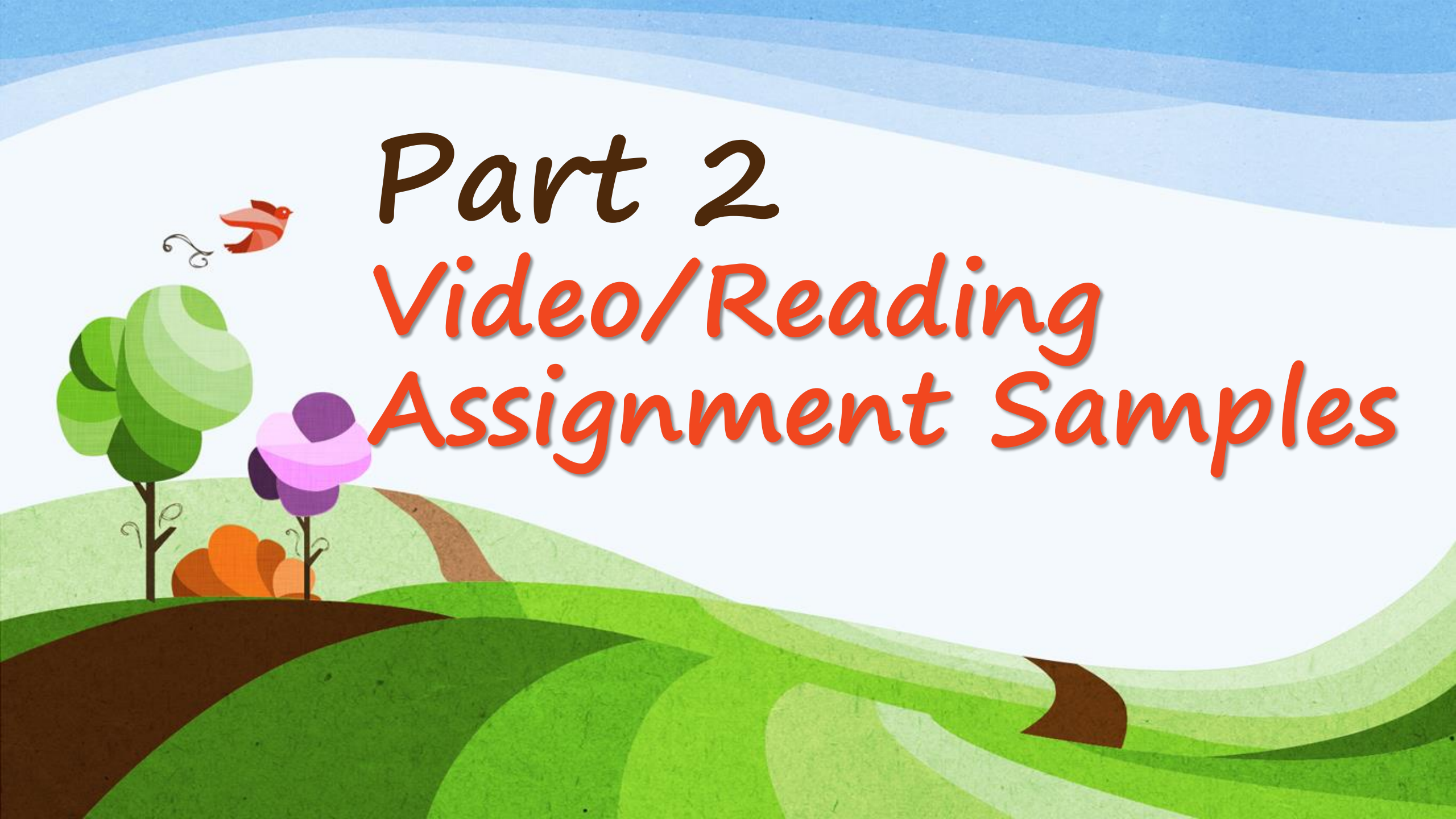
What is a "Flipped Classroom" ?

Here is **What I would Add**…

*The **flipped classroom** is a pedagogical model in which the typical lecture and homework elements of a course are reversed.*

A Reading or Video Assignment

is completed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions.


Part 2
Video/Reading
Assignment Samples

Video/Reading Assignment Samples

Here is How I Have Done It:

1. *As part of their homework, Intermediate Algebra and College Algebra students were required to watch the video that accompanied the textbook and to complete lecture note pages.*

2. *As part of their homework, Calculus students were required to read the textbook section and to complete a reading page.*

Intermediate Algebra Sample (reading)

Intermediate Algebra

7.1 Rational Functions and Simplifying Rational Expressions

Objectives
1. Find the domain of a rational expression.
2. Simplify rational expressions.
3. Write equivalent forms of rational expressions.
4. Use rational functions in applications.

Use Section 7.1 in your Electronic or Printed Textbook for These Notes:

A rational expression is an expression that can be written:

Example of a Rational Expression:

A rational expression is ***undefined*** if the _____ = _____

You will need to be able to use ***set-builder notation*** to complete the homework from this section. How would you use *set-builder notation* to write the domain of a function **when x cannot equal 7**?

To **simplify** a rational expression means **to write it in** _____ _____

Intermediate Algebra Sample (video)

State the Steps to Simplify a Rational Expression:

Step 1:

Step 2:

Example 2: Simplify, if possible

a. $\dfrac{-5a-5b}{a+b}$

b. $\dfrac{x+7}{7+x}$

c. $\dfrac{x-7}{7-x}$

d. $\dfrac{x^3+7x^2}{x^2+5x-14}$

Calculus Sample (reading)

Calculus I **Reading Quiz #23: Section 4.1**

Name _____ **#** _____ **Date** _____

1. _____Use rectangles to estimate the area under the parabola $y = -x^2+3$ and above the x-axis from $x = 0$ to $x = 2$. **Show all work using rectangles with a base of 1 unit. (See Example 1 in Section 4.1)**

2. _____Use rectangles to estimate the area under the parabola $y = -x^2+3$ and above the x-axis from $x = 0$ to $x = 2$. **Show all work using rectangles with a base of 1/4 unit.**

Calculus Sample (reading)

Calculus I **Reading Quiz #8: Section 2.1**

Name _____ **#** _____ **Date** _____

1. What is the formula for finding the slope of the tangent line to the curve $y = f(x)$ at the point $P(a, f(a))$?

2. Use this formula to find the slope of the tangent line to the graph of $f(x) = x^2 + x + 1$ at the point where $x = 2$. Show work.

Video/Reading Assignment Samples

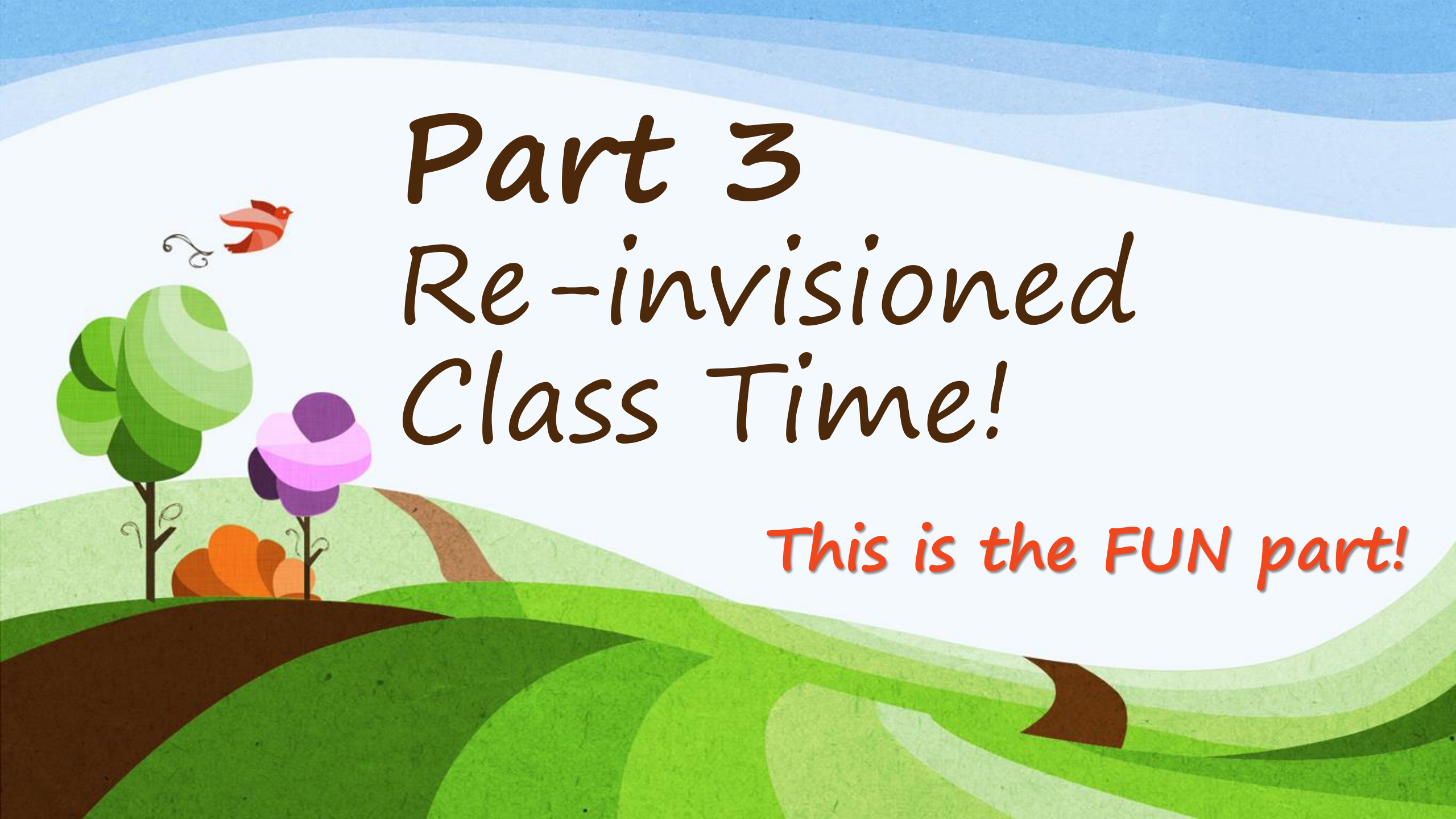
Here is What I would like to Do…

1. *Find quality videos for various sections*
2. *Create media presentations for students to*

**engage with (*NOTE: this is more than just "watching")*

Video/Reading Assignment

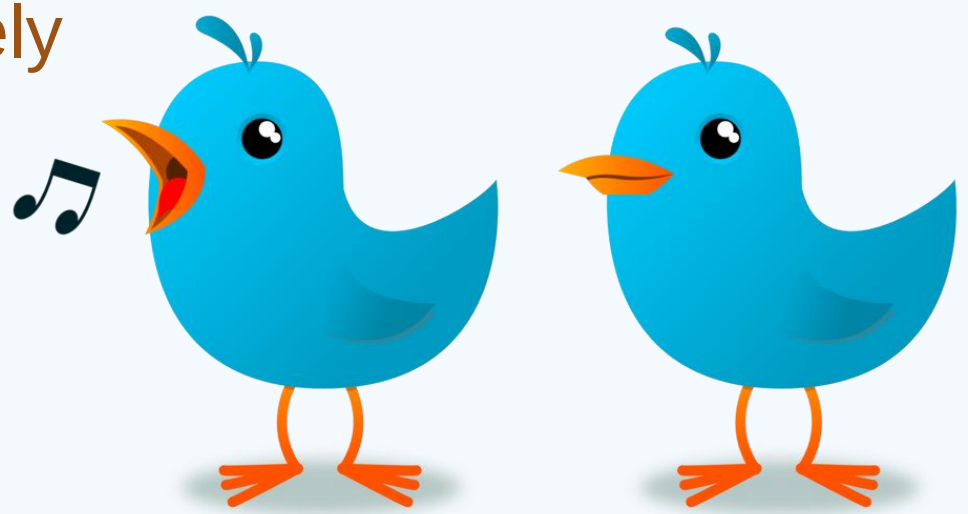
What will **YOU** use?


Part 3
Re-invisioned
Class Time!
This is the FUN part!

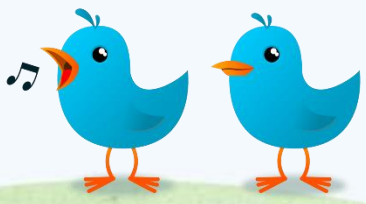
This is the FUN part!

How I used Class time:

- We discovered the Distance Formula using a geoboard
- We watched the “Pythagorean Theorem” clip from the ***Wizard of Oz***
- We completed worksheets collaboratively
  - Finding the derivate
  - Integrating
  - Using the Chain Rule
  - Discovering integration rules
  - Discovering exponential rules



This is the FUN part!



Jest for Fun

1. What happened when the teacher told ten jokes trying to make the class laugh?

18	17	8	9	1	18	13	5	18	8	14	2	18	13	12	5	12	

2. What is the best book on how to make up your own jokes?

12	17	3	16	5	14	10	7	17	1	15	6	2	11	4

Solve the equation. (Be sure to check each solution in the original equation.) Then find your solution in the answer column. Each time the exercise number appears in the code, write the letter of the answer in the space above it. If the answer has a ●, leave the space blank.

1. $\sqrt{x} = 7$
2. $\sqrt{3y} = 6$
3. $\sqrt{9a} = 12$
4. $\sqrt{\frac{m}{4}} = 3$
5. $\sqrt{\frac{u}{7}} = 10$
6. $\sqrt{d} + 5 = 20$
7. $\sqrt{4b} - 9 = 11$
8. $\sqrt{6p} + 13 = 18$

Answers 1-6

- I 700
- ● 16
- U 49
- V 64
- ● 400
- S 225
- F 36
- E 12
- H no solution

Answers 7-12

- P 13
- G 14

Punchline Worksheets
(by Marcy Mathworks)

Kutasoftware
Free
2-week
Trial

Textbook
Instructor
Resources

This is the FUN part!

How will **YOU** use your extra time**?**

Part 4

What I learned from my Mistakes & Successes

What I learned from my Mistakes & Successes

Keep Students from Flipping Out

☆ Handle Student Perception with care

What I learned from my Mistakes & Successes

Keep Students from Flipping Out

- ☆ Close the Loop on the Reading/Video Assignments

What I learned from my Mistakes & Successes

Keep Students from Flipping Out

- ☆ Lecture on the critical topics
- ☆ Help students understand why we have flipped

Questions

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Resources

Online Worksheet Creation: **kutasoftware.com**

Binder of Worksheets: **MarcyMathWorks.com**