Active Learning Without Dreaded Break Out Rooms

Stephanie Reikes

About Georgia Tech

Located in **Atlanta**

32,722
Total Enrollment
16,047 Undergrad

87%
Graduation Rate

8th
Public University
by US News & World Report

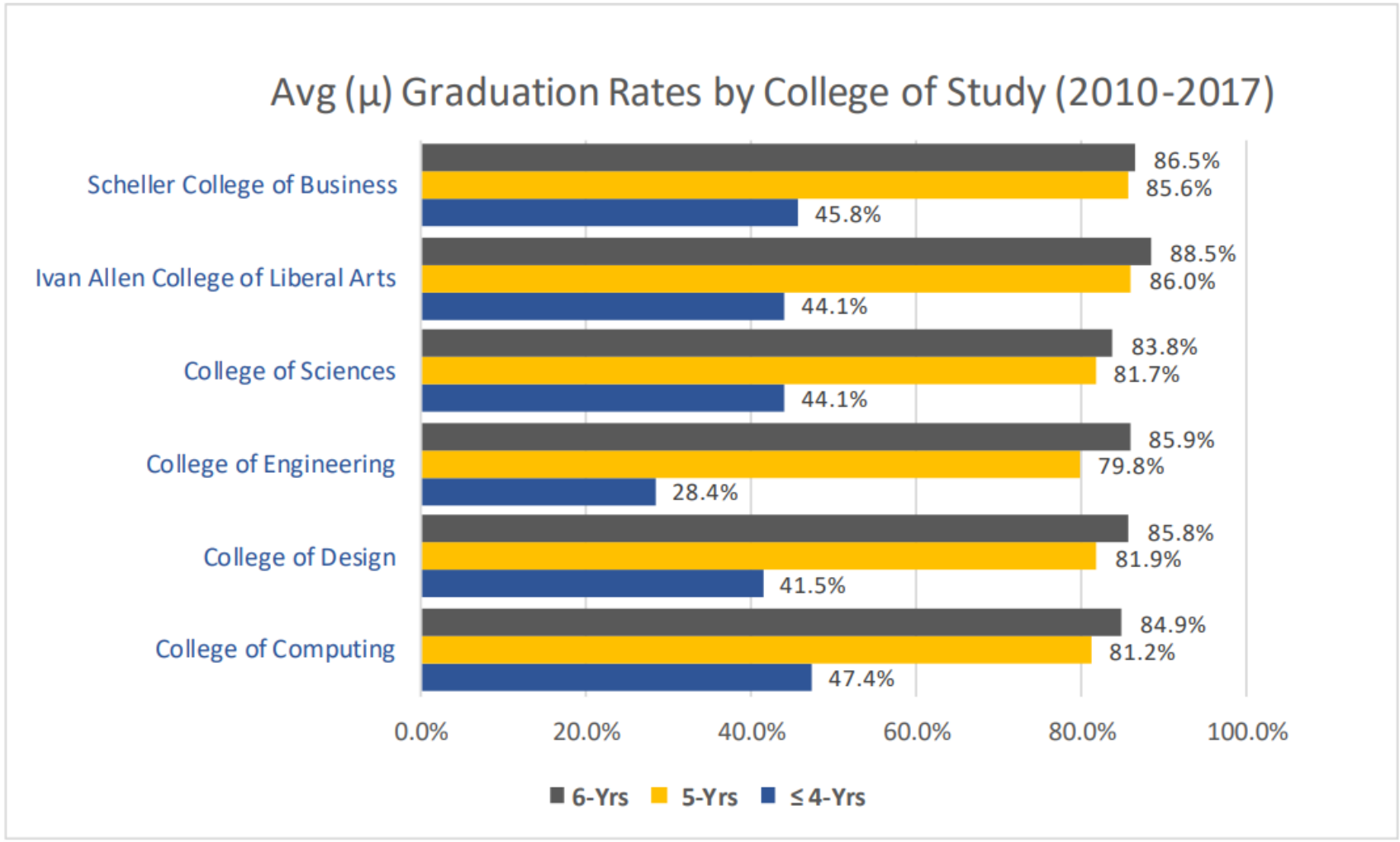
1439
Average SAT

32
Average ACT

97%
First Year Retention

61%
Residential

Graduation Rates



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Population

- Athletes
- Tech Promise (2007)
- APS Scholars @ Tech (2014)
- Valedictorian/Salutatorian in GA (20

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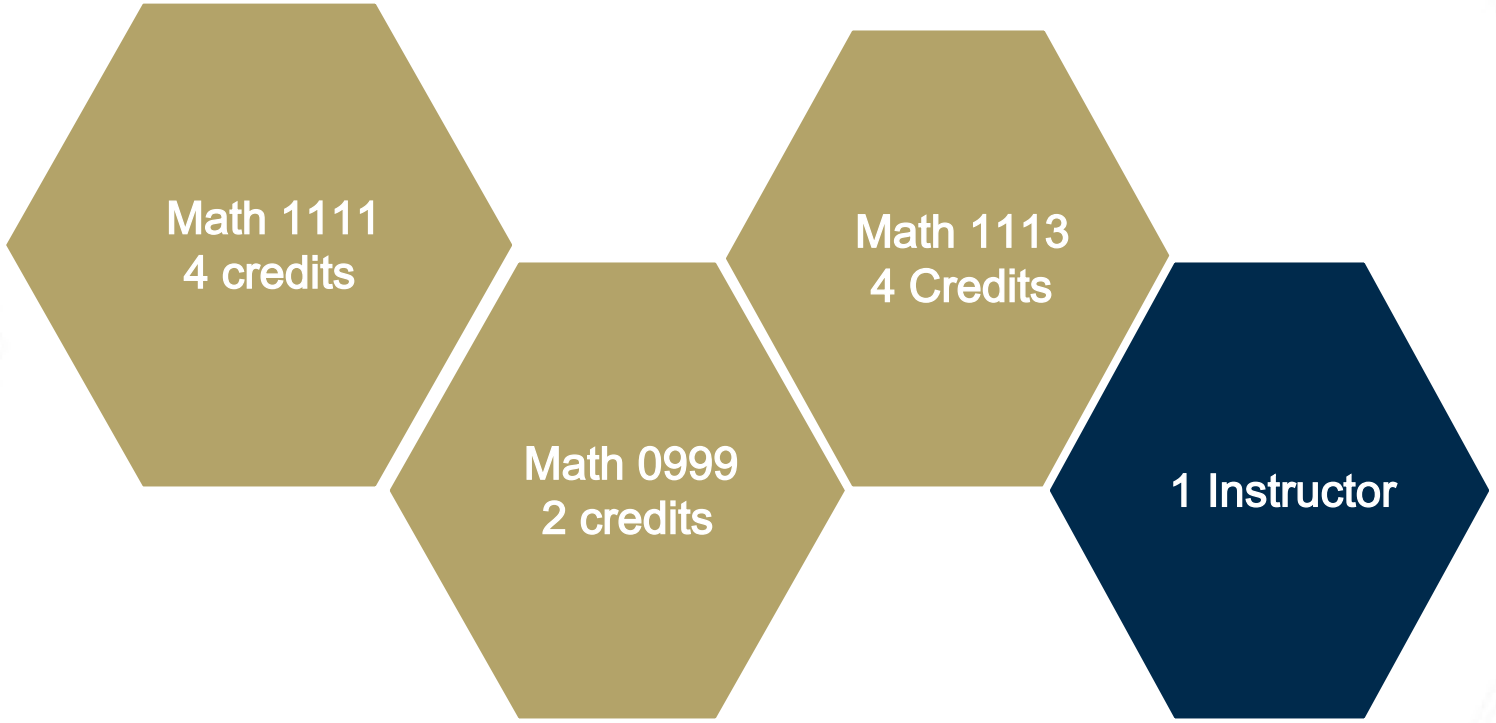
Current Structure



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Current Grading at Tech

- Math 1111
  - A, B, C, D, F, S, U
    - Passing A, B, C, D, S
    - Failing F, U
- Math 0999
  - A*, B*, C*, F*
    - Passing A*, B*, C*
    - Failing F*
- Math 1113
  - A, B, C, D, F, S, U
    - Passing A, B, C, D, S
    - Failing F, U

For Math 1111 and 1113,

D is for Done!

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Fall Semester Experience

Thoughts on Break Out Rooms?

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Active Learning w/ Polling

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Turning Point

- Cost: Free
  - Contract with Georgia Tech
- Not user friendly
- Each question in different poll to view answer afterwards
- Required students to login

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Poll Everywhere

- Cost: Free up to 40 students
- User Friendly, Simple in Design
- No student login required

	Higher ed free	Student pays	Individual instructor	Department-wide	University-wide
	Free	$13.99 year per student	$349 per semester	$2,500+	$10,000+
	Current plan	Upgrade	Upgrade	Contact us	Contact us
Unlimited questions ⓘ	✓	✓	✓	✓	✓
Audience Size ⓘ	40	Limit based on class-size	700	700+	Custom

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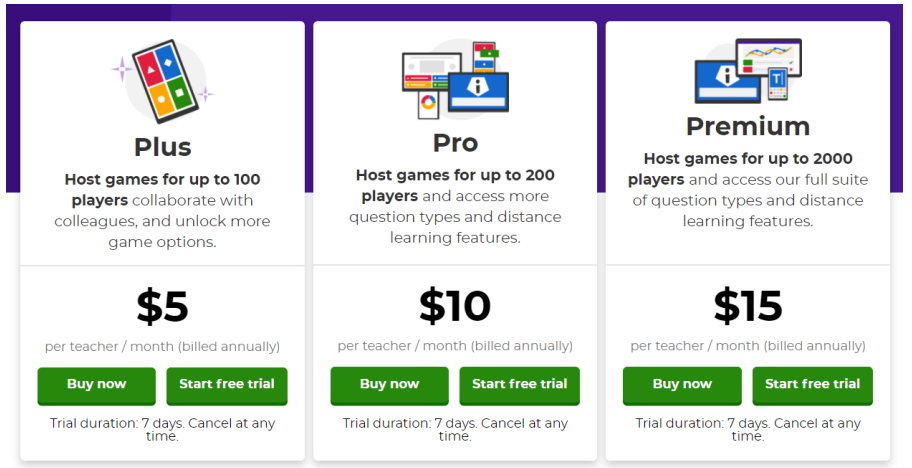
Kahoot!

- Cost: Free up to 50 students
- User Friendly, Bold Design
- No student login required

Higher education player limits

Mode	Basic	Plus	Pro	Premium	Premium+
Live game	50	100	200	2000	2000
Challenge	50	100	200	2000	2000



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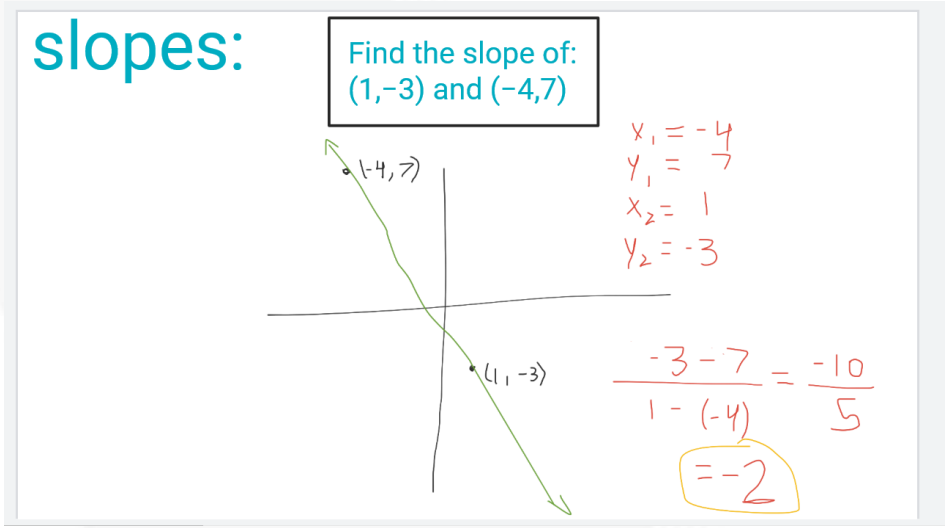
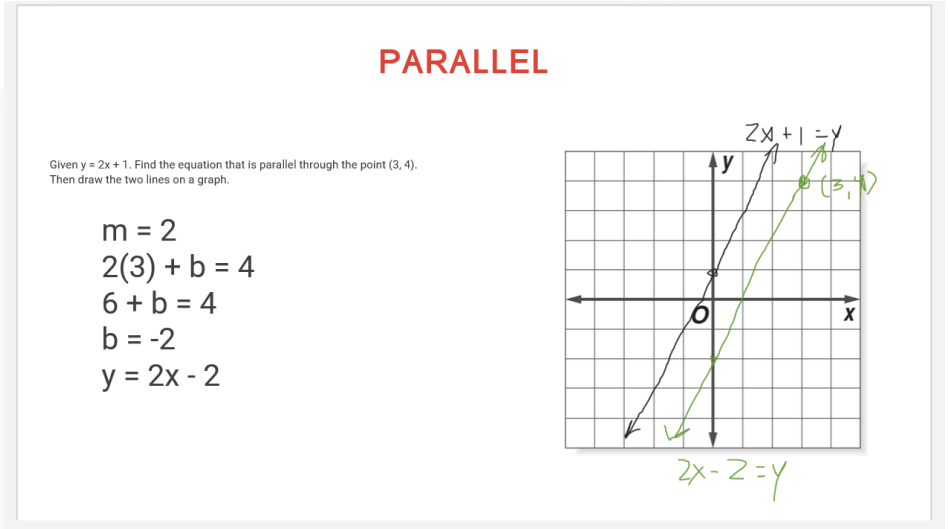
Google Jamboard



https://jamboard.google.com/

Example (View Only):

https://docs.google.com/document/d/1RnnBxSIU6AFnPY4vIUKJOFTGysk8HHdMH9DNcbR06pc/edit?usp=sharing



Practice Jamboard for everyone to try….

https://jamboard.google.com/d/1psFVHaeFautZ7Atbsn5CtdAHDQ1_-a9eHMHVGFYoqDM/edit?usp=sharing

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Worksheets

Simple worksheets, but implementing “Three before Me”

Three Before Me: Before a instructor will answer a question (or give a hint), the student has to consult three other resources to try and find the answer to their question (another student, textbook, google, etc.).

“Agree before Me”

Math 1113 Studio Problems 1/26/2021

1. Solve for x using the quadratic formula:

$$4x^2 - 6x = 14$$

2. Solve for x using the square root method:

$$-2x^2 + 15 = x^2 - 12$$

3. Solve for x by factoring:

$$x^2 - 13x = 30$$

4. Solve for x by completing the square:

$$x^2 - 8x = -5$$

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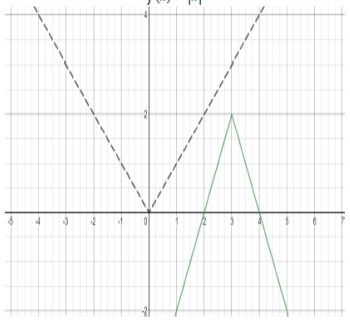
Play a Game: “Secret Word”

Math 1113 Studio Worksheet 2/4/21

Find the Secret Word! The answer to each question corresponds to a letter in the key at the end.

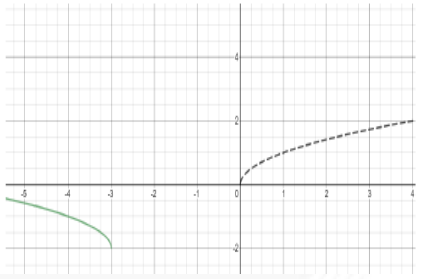
1. Write the equation for this transformation of the original function

$f(x) = |x|$



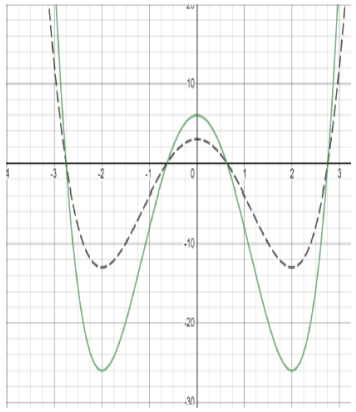
2. Write the equation for this transformation of the original function

$f(x) = \sqrt{x}$



3. The original function below (shown with the dotted line) is given by the equation $f(x) = x^4 - 8x^2 + 3$.

Determine the equation of function shown with the solid green line.



4. Given $f(x) = x^2 + 10x + 16$ and $g(x) = x + 8$, find $\left(\frac{f}{g}\right)(x)$.

5. Given $f(x) = x^2 - 2x$, find $(f \circ f)(1)$

6. Find $(g \circ f)(5)$ when

$$f(x) = \frac{5}{x}$$
$$g(x) = x^2 + 2x + 3$$

Possible Answers:

A	48
B	$\frac{1}{2}x^4 - 8x^2 + 5$
C	$\frac{1}{2}x + 1$
D	-6
E	3
F	x^2
G	$-\lvert x - 3\rvert + 2$
H	15
I	$\sqrt{-(x+3)} - 2$
J	15
K	0
L	$x^2 + 9x + 8$
M	$\lvert x - 2\rvert + 3$
N	$2x^4 - 16x^2 + 6$
O	$-2\sqrt{x-3}$
P	$2x + 1$
Q	20
R	6
S	$\sqrt{-x+3} - 2$
T	$x + 2$
U	$\sqrt{2x} - 3$
V	-18
W	$-2\lvert x - 3\rvert + 2$
X	-120
Y	$x^4 - 8x^2$
Z	12

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Class Communication

Questions? Thoughts? Discussion?

Stephanie Reikes
Lecturer
School of Mathematics,
Tutoring & Academic Support
Georgia Tech
sreikes7@gatech.edu

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