Panel 1

Abducted by an alien circus company, Professor ~~Boyle~~ is forced to write calculus equations in center ring.

Math 2511

Calculus 3

Welcome!

Wachsmuth

Panel 2

About this Course:

http://pirate.shu.edu/~wachsmut

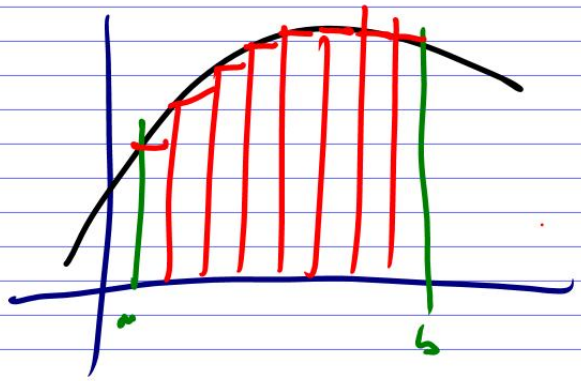
Panel 3

Calc I – Overview

	Def.	Geometry	How-to
• Limit	✓	✓	✓
• Continuity	$\lim_{x \to a} f(x) = f(a)$	graph has no gaps, holes	how to find limits
• Differentiation	$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$	slope of tangent	product, quotient, chain
• Integration	$\int_a^b f(x)\,dx = \lim$ Riemann Sums	area under f if $f > 0$	antiderivatives!

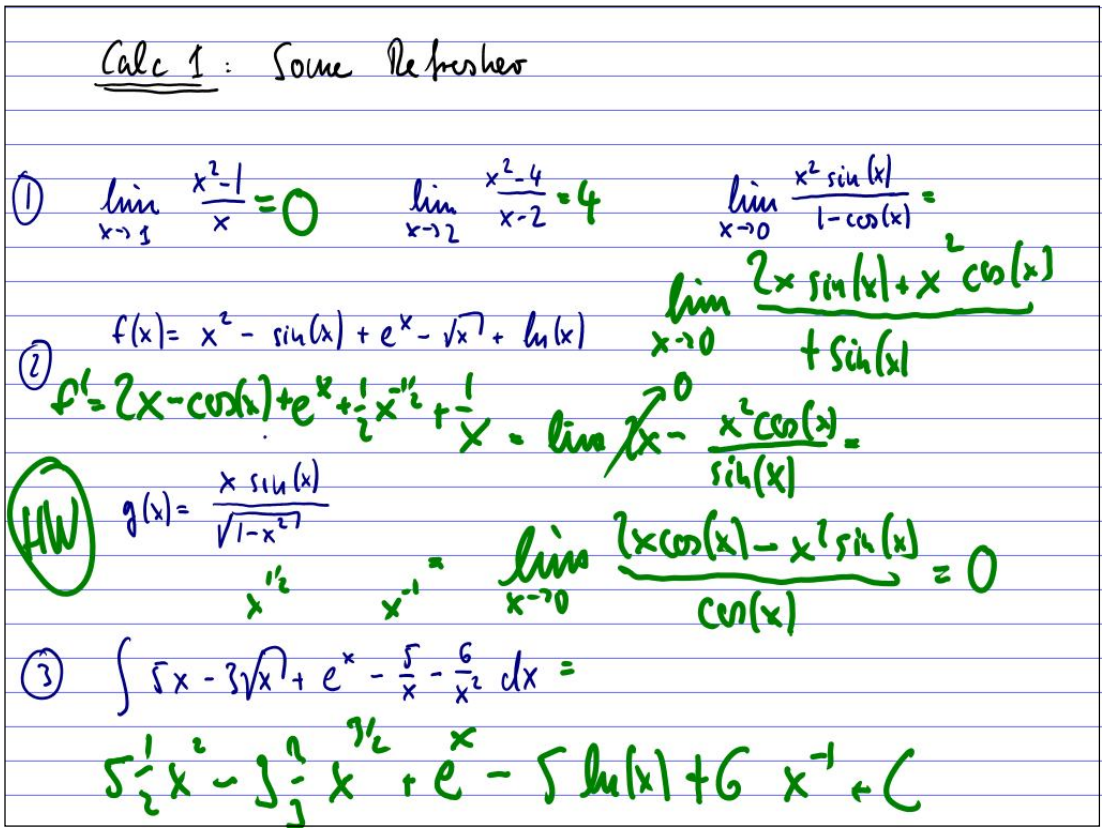
Panel 4

$$\lim_{x \to 1} \frac{x^2}{x^2+1} = \frac{1}{2}$$

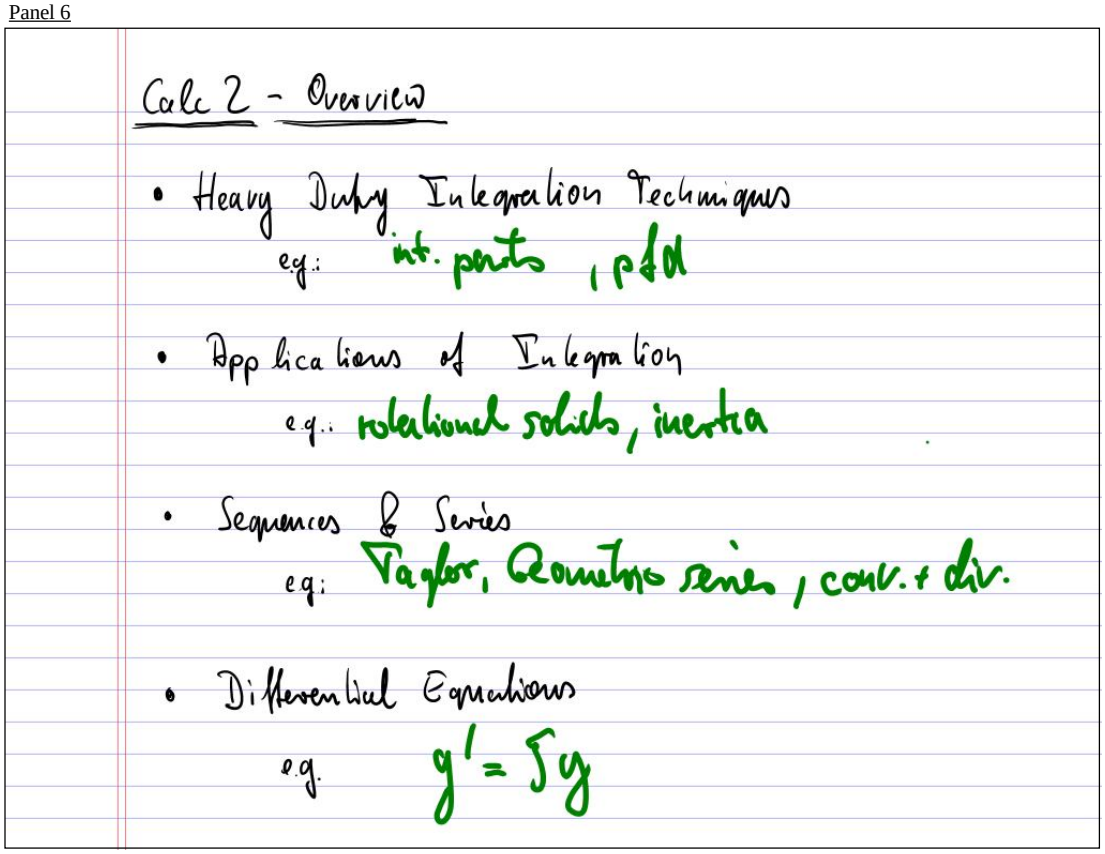


$$\int_0^1 x^5\,dx = \frac{1}{6}x^6\Big|_0^1 = \frac{1}{6}$$

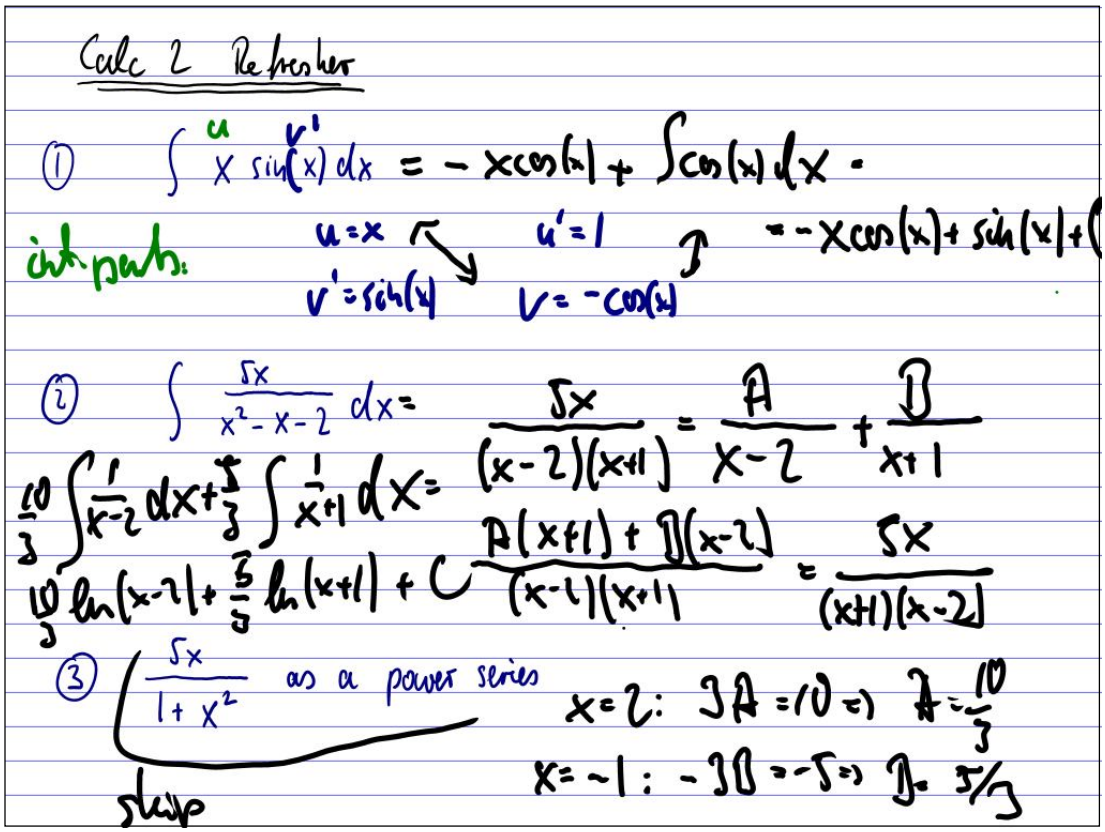
Panel 5



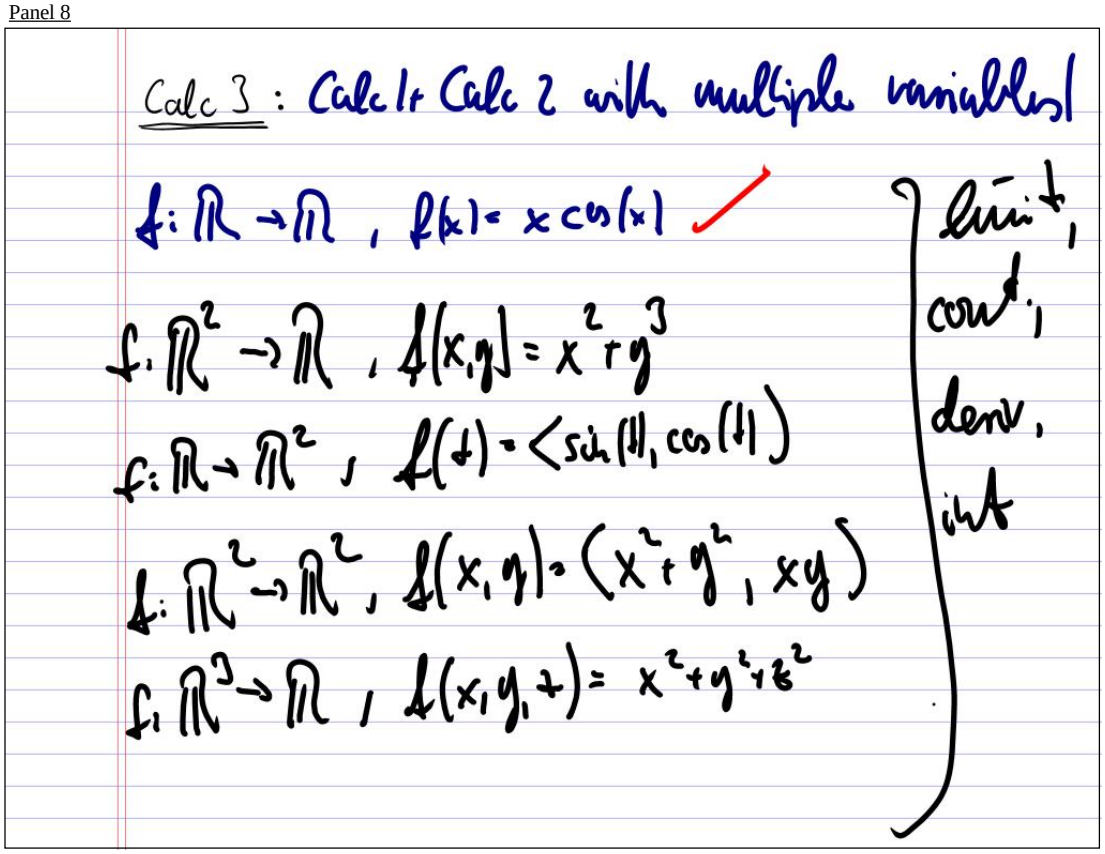
Panel 6



Panel 7

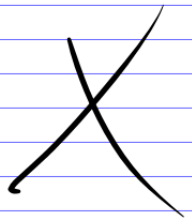


Panel 8



Panel 9

$f: \mathbb{R} \to \mathbb{R}$, e.g.

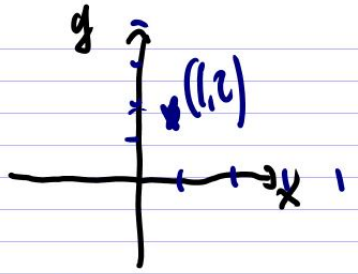


Panel 10

Introducing $\mathbb{R}^3$

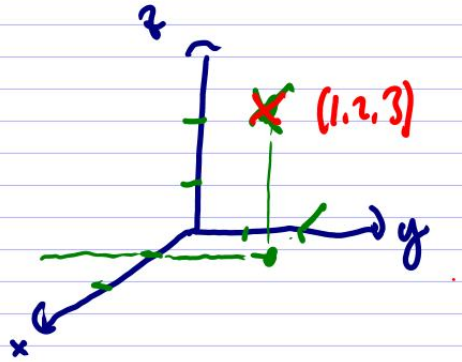
Coordinate system in $\mathbb{R}^2$:

Ex: plot (1,2), (4,3)



Coordinate system in $\mathbb{R}^3$:

Ex: plot (1,1,1), (1,2,3)



x-axis: all points (t, 0, 0)

y-axis:

z-axis: (0, 0, t)

xy plane: all points (x, y, 0)

yz plane:

xz plane: (x, 0, z)