Panel 1

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

Welcome to Calculus 1

with Bert Wachsmuth

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Panel 2

Calculus Overview

Science Hall 168
Bert Wachsmuth
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1. Install Dyknow
2. Buy text book

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Panel 3

Grading

Quizzes every week:	100
3 exams:	300
1 final:	100
Computer assignments:	100
	600

Course Content:

- Functions, Limits, Continuity
- Derivatives
- Applications
- Integration
- Inverse Functions

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Panel 4

About DyKnow

Downloaded by now - install

Communications Settings:

vision.dyknow.com/shu.edu

Your username: 7-letters as usual

Your password: - same - !

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Panel 5

Dyknow Interactive ①

What is Calculus:

a) boring course to take because it is required

b) difficult course to pass by cheating

c) exciting and challenging course to expand my mathematical horizont and to stimulate my mathematical senses

d) calculus - never heard of it

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Panel 6

Dyknow Interactive ②

Solve $8x - x(x+3) = 4x(1-x)$

① Expand: $8x - x^2 - 3x = 4x - 4x^2$

② Collect: $3x^2 + x = 0$

③ Solve: $x(3x+1) = 0$ $x = 0$, $x = -1/3$

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Panel 7

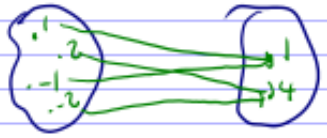
Functions

Def: A function is a rule that assigns to each element x in a set A exactly one element y or more commonly $f(x)$, in a set B.

Note: The set A is called: Domain

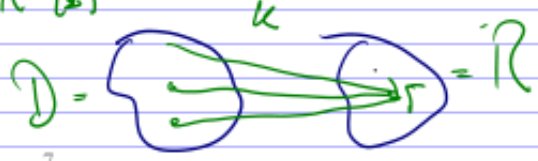
The set B is called: Range

Ex: $f(x) = x^2$



$g(x) = \frac{1}{x-1}$ $D = \mathbb{R} - \{1\}$

$k(x) = 5$



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Panel 8

Representing a function

4 different ways:
- verbally
- numerically (table)
- algebraically
- graphically

Ex: Find the domain of $f(x) = \sqrt{x+2}$; $x+2 \geq 0$, $x \geq -2$

and $g(x) = \frac{x-2}{x^2-x-3}$

$a=1$ $b=-1$ $c=-3$

$x^2 - x - 3 = 0$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$x = \frac{+1 \pm \sqrt{1+12}}{2} = \frac{1 \pm \sqrt{13}}{2}$

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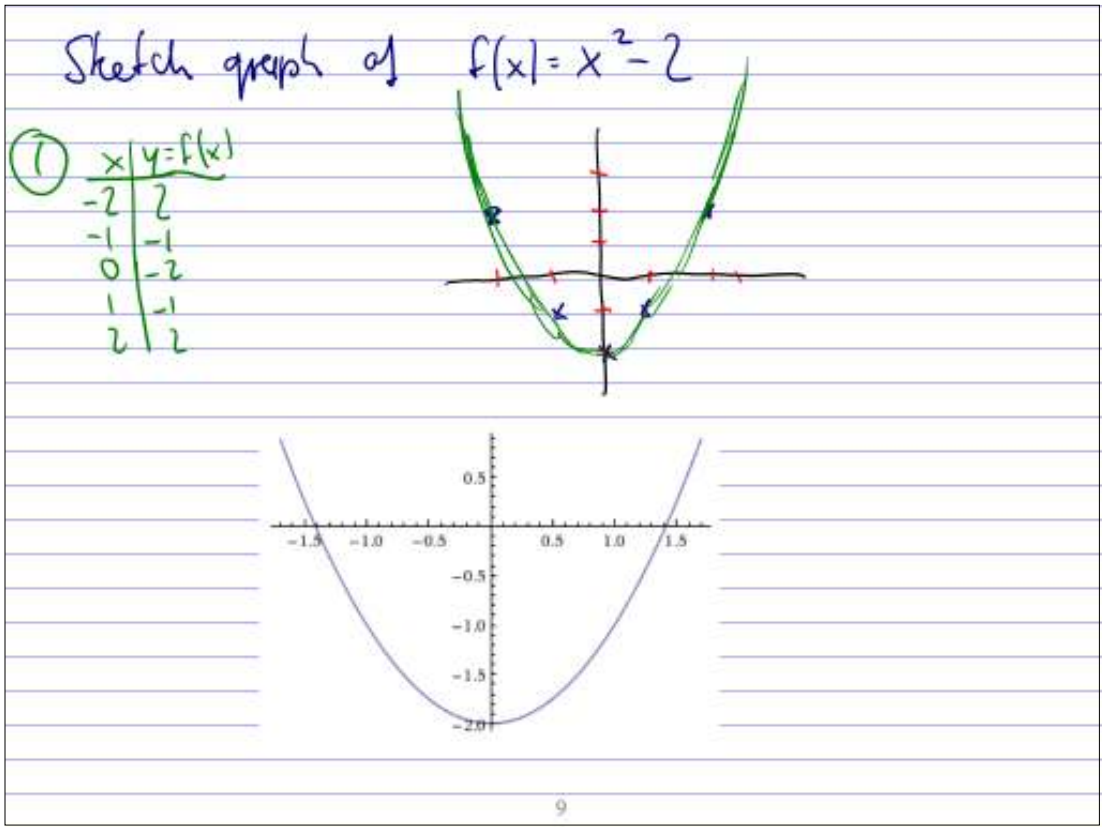
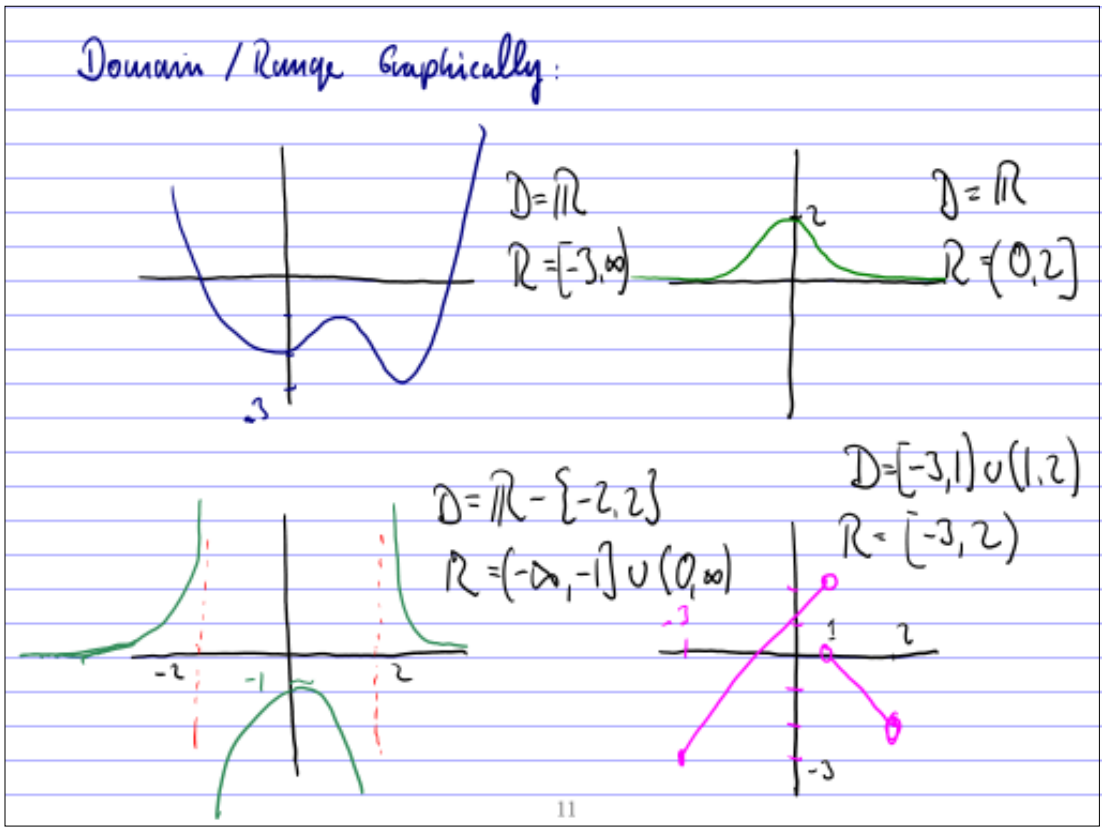
Panel 9

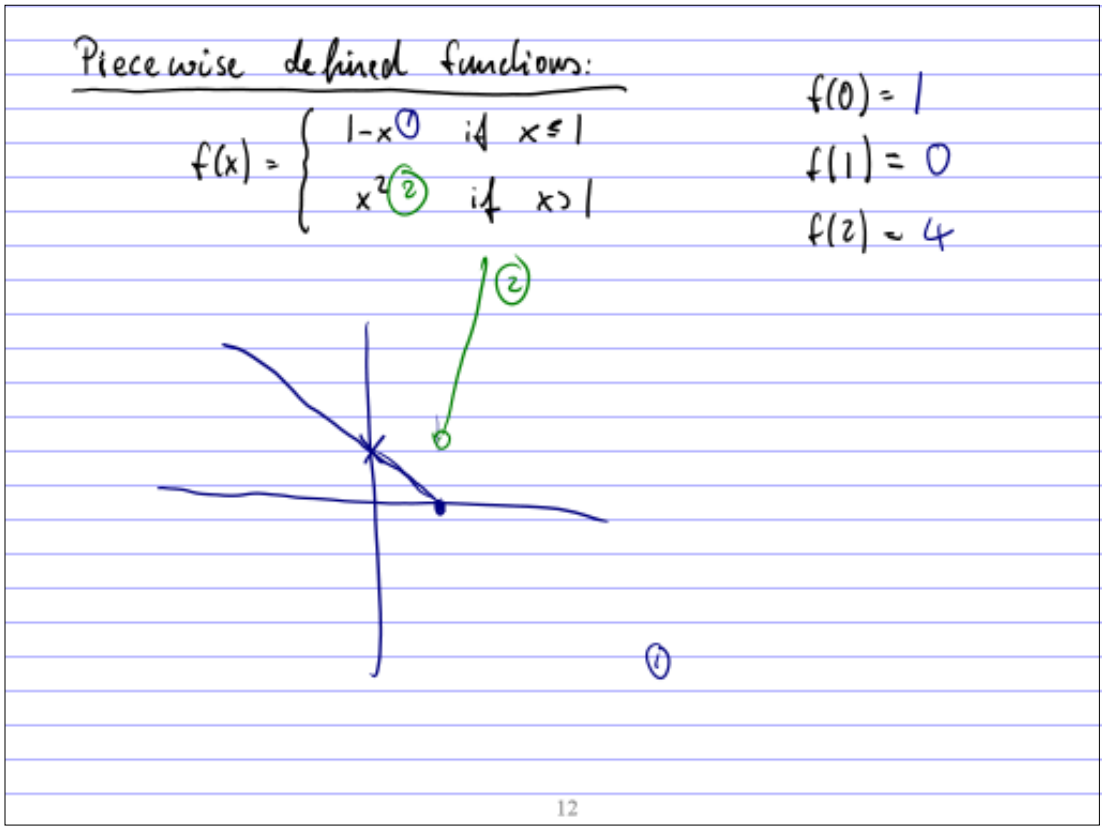


Panel 10

Panel 11



Panel 12



Panel 13

A Function Catalog

Linear
Power
Polynomials
Rationals
Roots
Trigs
Exp + Log

$\frac{x-1}{x^2-4}$

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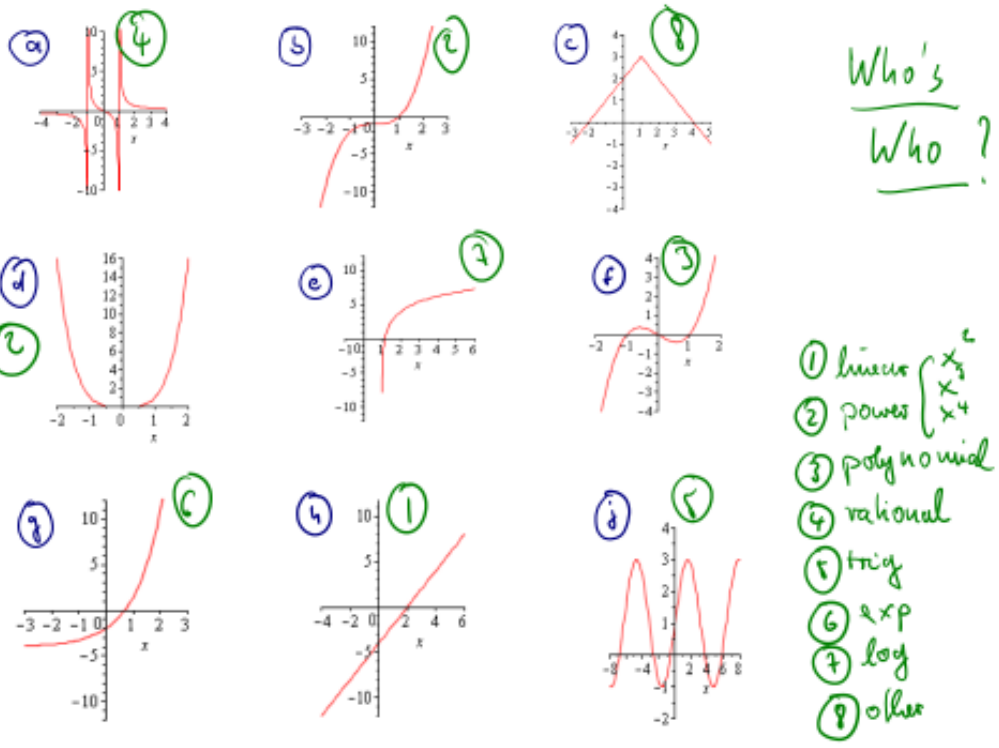
Panel 14



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