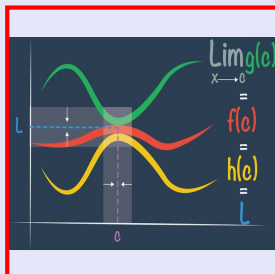


Math 261

Fall 2022

Lecture 1



Math 261

M-Th 8:45-9:55

my website: www.mymathclasses.com

Use Canvas

Use canvas to contact me or email

non-calc question faradira@elac.edu

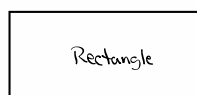
office hours: Use Zoom

MW 12:30-2:00

TTh 4:30-6:00

Some review

1) Find area & perimeter of the shape below



$$5x+2$$

$$\begin{aligned} A &= LW \\ &= (5x+2)(5x-2) \\ &= 25x^2 - 4 \end{aligned}$$

$$1) \frac{25x^2 - 4}{20x}$$

$$\begin{aligned} P &= 2L + 2W \\ &= 2(5x+2) + 2(5x-2) = 20x \end{aligned}$$

$$\text{Solve } 4x^2 - 5x + 1 = 0$$

Method: Factoring

$$(x-1)(4x-1) = 0$$

use Zero-Factor Prop.

$$x-1=0 \quad \text{OR} \quad 4x-1=0$$

$$x=1$$

$$x=\frac{1}{4}$$

$$\left\{ \frac{1}{4}, 1 \right\}$$

Method: Quadratic Formula

$$ax^2 + bx + c = 0, a \neq 0 \Rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$4x^2 - 5x + 1 = 0$$

$$a=4, b=-5, c=1$$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(4)(1)}}{2(4)}$$

$$= \frac{5 \pm \sqrt{9}}{8} = \frac{5 \pm 3}{8}$$

$$x = \frac{5+3}{8} = 1 \quad \left\{ 1, \frac{1}{4} \right\}$$

$$x = \frac{5-3}{8} = \frac{1}{4}$$

Simplify $(\sin x - \cos x)^2 - 1$

$$= \sin^2 x - 2 \sin x \cos x + \cos^2 x - 1$$

use

$$(A-B)^2 =$$

$$A^2 - 2AB + B^2$$

$$= \cancel{1} - 2 \sin x \cos x - \cancel{1}$$

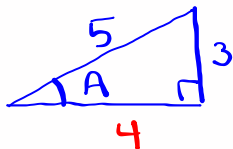
$$= -2 \sin x \cos x = \boxed{-\sin 2x}$$

Use

$$\sin 2A = 2 \sin A \cos A$$

Given $0^\circ < A < 90^\circ$, and $\sin A = \frac{3}{5}$

Find $\cos A$, $\tan A$, $\sec A$, $\csc A$, and $\cot A$.



$$\sin A = \frac{3}{5}$$

$$\csc A = \frac{5}{3}$$

$$\cos A = \frac{4}{5}$$

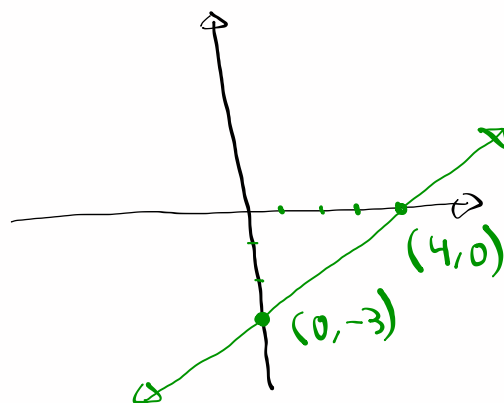
$$\sec A = \frac{5}{4}$$

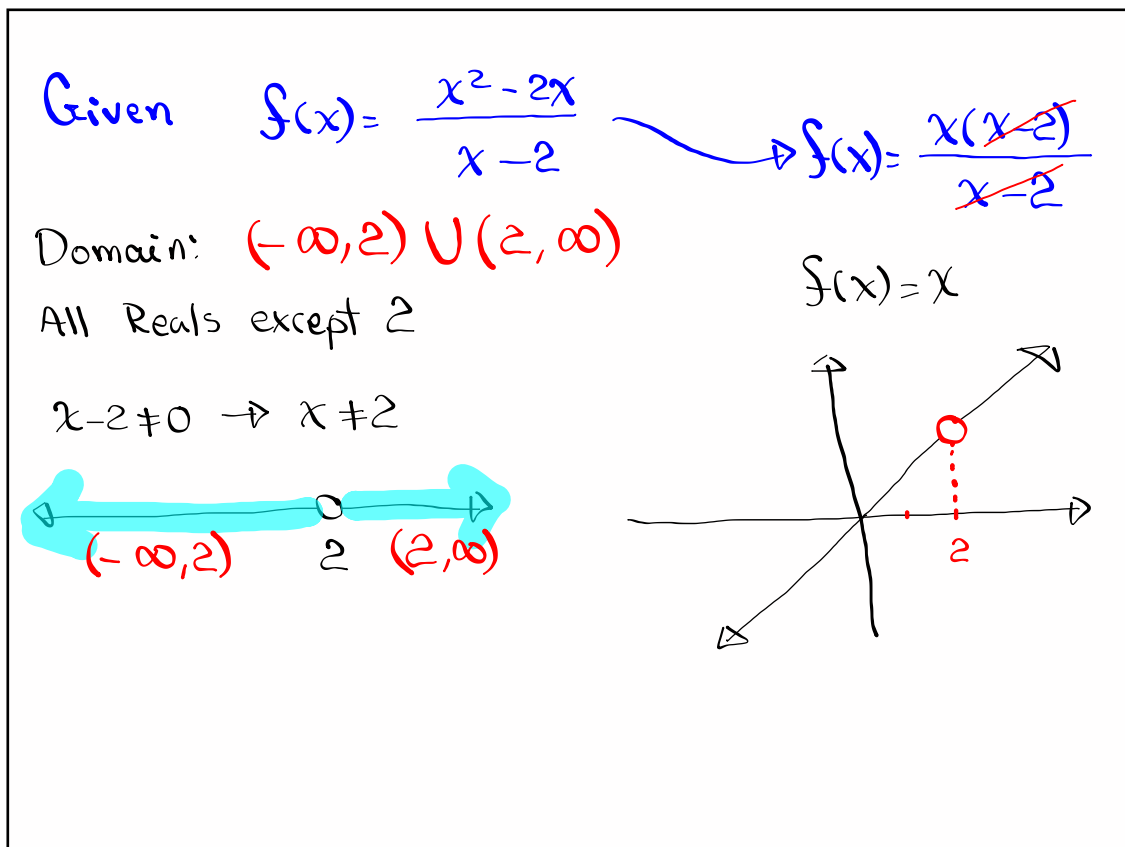
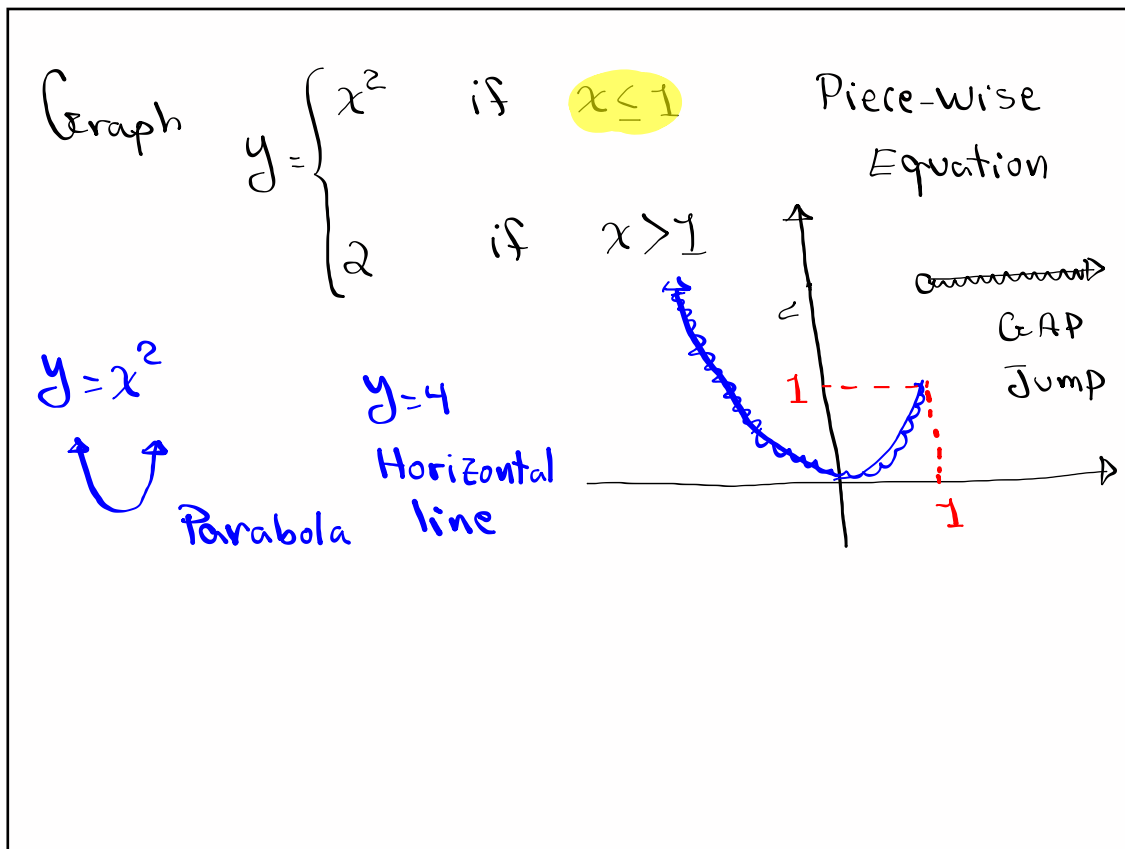
$$\tan A = \frac{3}{4}$$

$$\cot A = \frac{4}{3}$$

Graph $y = \frac{3}{4}x - 3$

Slope-Int Form $y = mx + b$
 $m = \frac{3}{4}$ (Rise), Y-Int $(0, -3)$
 (Run)





Graph $|y| - |x| = 4$

Q I

$$x > 0, y > 0$$

$$|x| = x \quad |y| = y$$

$$y - x = 4$$

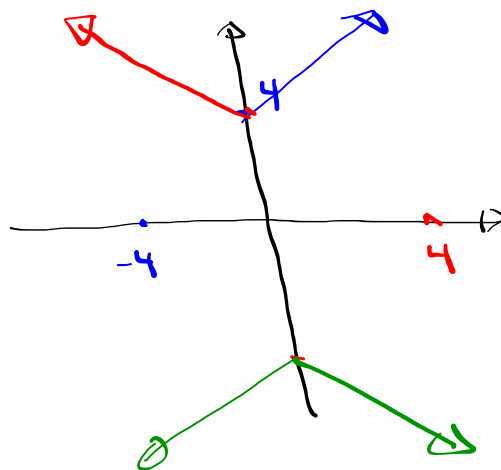
Q II

$$x < 0, y > 0$$

$$|x| = -x \quad |y| = y$$

$$y - (-x) = 4$$

$$y + x = 4$$



Graph $y = |\sin x|$ for $0 \leq x \leq 2\pi$

Recall

$$y = \sin x$$

