

Pre-Calculus

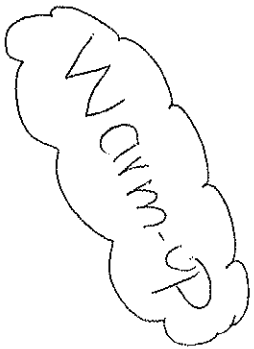
Name: _____

Period: _____

Exit Ticket

Solving Trigonometric Equations

Directions: Solve $\cos^3 x = \cos x$



Cornell Notes

Name Eddie Delgado


Date 10/27/11

Topic


Class/ Subject Prc-calculus P.5
Mrs. Bunn

(12:51)
Solve:
(exact solutions)
Quiz: Tomorrow

(1:01)
HW Questions


Homework

(10-4) 5.1-5.3
wksheet



Warm-up (Exit Ticket)

$\cos^3 x = \cos x$
 $\cos^3 x - \cos x = 0$
 $\cos x (\cos^2 x - 1) = 0$
 ~~$\cos x \sin x$~~ $\cos x = 0$ $\cos^2 x - 1 = 0$
 $\frac{\pi}{2}, \frac{3\pi}{2}$ $\sqrt{\cos^2 x = 1}$
 $\cos x = \pm 1$
 $0, \pi$

Pg 377-376 #19
 $-\tan 3x (\tan x - 1) = 0$
 $\tan 3x = 0$ $\tan x - 1 = 0$
 $\theta = 3x$ $\tan x = 1$
 $\tan \theta = 0$ $x = \pi/4$
 $\theta = 0$
 $3x = 0$
 $x = 0$

#27
 $2 \sin x + \csc x = 0$
 $2 \sin x + \frac{1}{\sin x} = 0$ ~~$\times \sin x$~~ $\left(\frac{2 \sin^2 x + 1}{\sin x} \right) \times (\sin x) = 0$
 $2 \sin^2 x + 1 = 0$
 $2 \sin^2 x = -1$
 $\sqrt{\sin^2 x} = \sqrt{-1/2} \rightarrow \sin x = \sqrt{-1/2} \rightarrow$ not a real #
NO real solutions

#11 $3 \sec^2 x - 4 = 0$
 $3 \sec^2 x = 4 \rightarrow \sec^2 x = 4/3 \rightarrow \sec x = \sqrt{4/3}$
 $\sec x = \frac{2}{\sqrt{3}} \rightarrow \cos x = \pm \frac{\sqrt{3}}{2}$
 $x = \pi/6 + n \cdot 2\pi$
 $x = 5\pi/6 + n \cdot 2\pi$

Cornell Notes

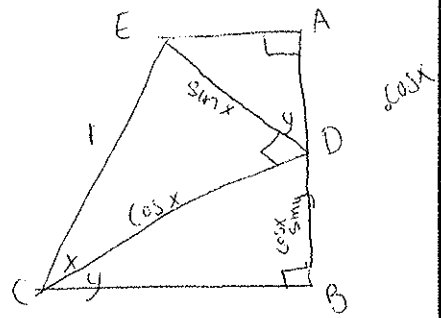
Name _____

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Subject _____

(1:20)
Sum + Difference
Formula worksheets



#31 $2\sec^2 x + \tan^2 x - 3 = 0$
 $2(1 + \tan^2 x) + \tan^2 x - 3 = 0$
 $2 + 2\tan^2 x + \tan^2 x - 3 = 0$
 $3\tan^2 x - 1 = 0 \rightarrow 3\tan^2 x = 1$
 $\tan^2 x = \frac{1}{3} \rightarrow \tan x = \pm \frac{1}{\sqrt{3}}$
 $\tan x = \pm \frac{\sqrt{3}}{3}$
 $x = \frac{\pi}{6}, -\frac{\pi}{6}, \frac{11\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}$

Example to find sides

$\sin x = \frac{\text{opp}}{\text{hyp}} = \frac{ED}{AC} = \frac{ED}{1}$
 $\cos x = \frac{\text{adj.}}{\text{hyp}} = \frac{CD}{1}$

$(\sin y) = \left(\frac{DB}{\cos x}\right) \cdot \cos x \quad \boxed{DB = \cos x \sin y}$

Additional ~~Work~~ Questions

pg 367 #33

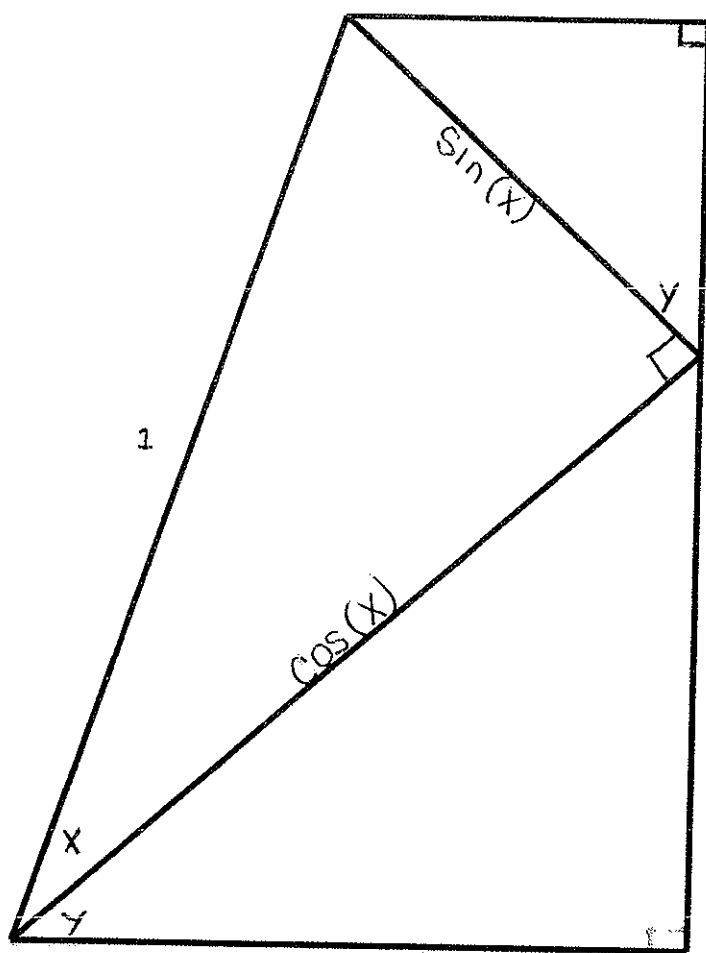
$\tan x + \cot y = \tan y + \cot x$
 $\frac{\tan x \cot y}{\tan x \cot y} = \frac{\cot y + \tan x}{\tan x \cot y}$
 $\boxed{\tan y + \cot x}$

Students reviewed yesterday's homework and learned a new way to find sides of a triangle with trigonometric functions

Pre-Calculus
The Sum and Difference Formulas

Find a partner and begin to find the length of each side of the triangles in the figure below using sine and cosine.

Make sure to use a pencil!



Pre-Calculus

The Sum and Difference Formulas

Now let's use our information to find the formula for

$$\sin(x + y) =$$

$$\cos(x + y) =$$

