

STUDY TABLES

4.4, 4.5, and 4.7 Review
Precalculus

SECTION 4.4

- Graphing $\sin x$ and $\cos x$
- All transformations
- Writing equations given a graph
- Word problems such as Ferris wheel and tide problems

SECTION 4.4

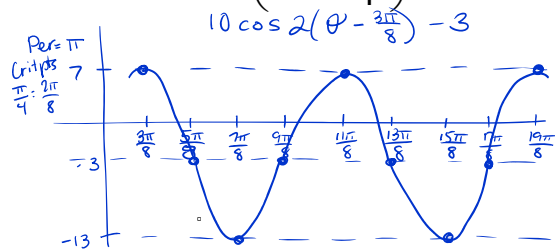
Graph 2 periods.

$$y = 10 \cos\left(2\theta - \frac{3\pi}{4}\right) - 3$$

SECTION 4.4

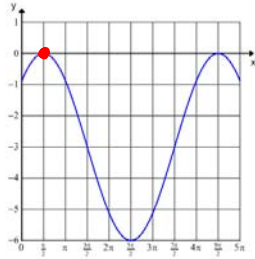
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SECTION 4.4

What is the equation of the graph, starting with the given point?



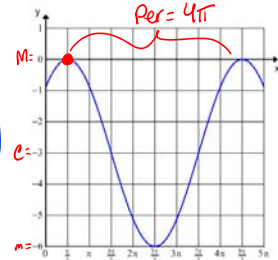
SECTION 4.4

What is the equation of the graph, starting with the given point?

$$B = \frac{2\pi}{4\pi} = \frac{1}{2} \quad A = 3$$

$$D = \frac{\pi}{2} \quad C = -3$$

$$y = 3\cos\left[\frac{1}{2}\left(\theta - \frac{\pi}{2}\right)\right] - 3$$



SECTION 4.4

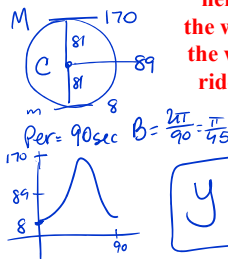
Write an equation to model the following situation:

A Ferris wheel has a maximum height of 170 feet. The radius of the wheel is 81 feet. One rotation of the wheel takes 90 seconds, and the riders get on at the bottom of the wheel.

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A Ferris wheel has a maximum height of 170 feet. The radius of the wheel is 81 feet. One rotation of the wheel takes 90 seconds, and the riders get on at the bottom of the the wheel.



$$y = -81\cos\left(\frac{\pi}{45}x\right) + 89$$

SECTION 4.4

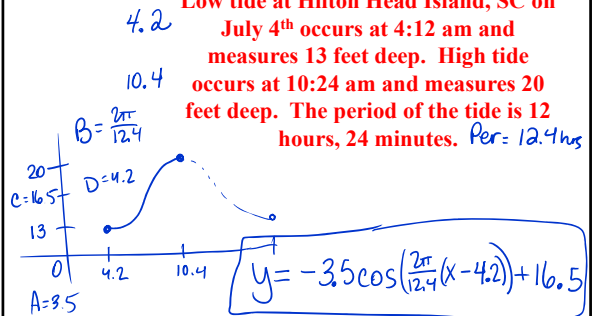
Write an equation to model the following situation:

Low tide at Hilton Head Island, SC on July 4th occurs at 4:12 am and measures 13 feet deep. High tide occurs at 10:24 am and measures 20 feet deep. The period of the tide is 12 hours, 24 minutes.

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SECTION 4.5

- Graphing $\tan x$, $\cot x$, $\sec x$, and $\csc x$
- All transformations
- Solving trig equations over a given interval.

SECTION 4.5

What is the period of

$$y = -4 \cot(3x) + 1$$

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$$\text{Per} = \frac{\pi}{3}$$

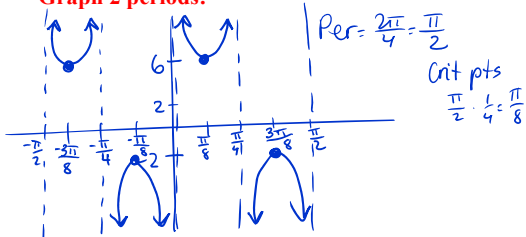
SECTION 4.5

Graph 2 periods:

$$y = 4 \csc(4x) + 2$$

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SECTION 4.5

Solve over the given interval
(CALC OK, round to hundredths).

$$\csc x = -3.3 \quad \frac{3\pi}{2} \leq x \leq 2\pi$$

SECTION 4.5 **Solve over the given interval**
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$\csc x = -3.3$ $\frac{3\pi}{2} \leq x \leq 2\pi$

$\theta = \sin^{-1}\left(\frac{1}{3.3}\right)$
 $\theta = .30$

$x = 2\pi - .3$
 $= \boxed{5.98}$

SECTION 4.5

Solve over the given interval.

$\cot x = \frac{\sqrt{3}}{3}$ $\pi \leq x \leq \frac{3\pi}{2}$

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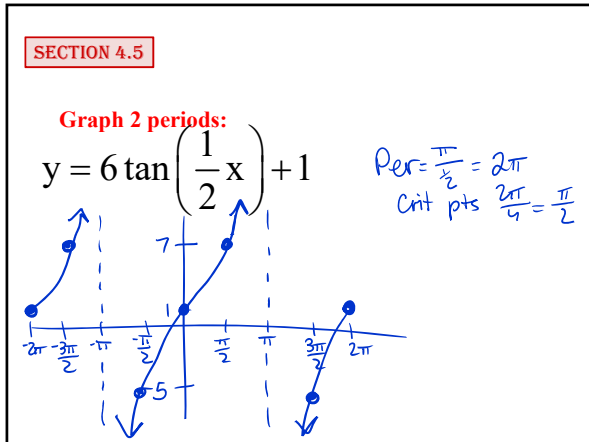
$\tan x = \sqrt{3}$
 $\theta = 60^\circ = \frac{\pi}{3}$

$x = \boxed{\frac{4\pi}{3}}$

SECTION 4.5

Graph 2 periods:

$y = 6 \tan\left(\frac{1}{2}x\right) + 1$



SECTION 4.5

Solve over the given interval.

$$\sec x = -\sqrt{2} \quad \frac{\pi}{2} \leq x \leq \pi$$

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Solve over the given interval.

$$\sec x = -\sqrt{2} \quad \frac{\pi}{2} \leq x \leq \pi$$

$\cos x = -\frac{\sqrt{2}}{2}$
 $\theta = 45^\circ = \frac{\pi}{4}$

$x = \frac{3\pi}{4}$

- SECTION 4.7**
- Inverse trig graphs $\sin^{-1} x$, $\cos^{-1} x$, $\tan^{-1} x$
 - Find the inverse trig function value for all 6 inverse trig functions

SECTION 4.7

Solve in the appropriate interval
(function value – one answer).

$$\cos^{-1}\left(-\frac{1}{2}\right) =$$

$$\sin^{-1}\left(-\frac{1}{2}\right) =$$

SECTION 4.7

Solve in the appropriate interval
(function value – one answer).

$$\cos^{-1}\left(-\frac{1}{2}\right) = \frac{2\pi}{3}$$

$$\sin^{-1}\left(-\frac{1}{2}\right) = -\frac{\pi}{6}$$

cos
+
n

SECTION 4.7

Solve in the appropriate interval
(function value – one answer).

$$\tan^{-1}\left(-\sqrt{3}\right) =$$

$$\sec^{-1}\left(\sqrt{2}\right) =$$

SECTION 4.7

Solve in the appropriate interval
(function value – one answer).

$$\tan^{-1}\left(-\sqrt{3}\right) = -\frac{\pi}{3}$$

$$\sec^{-1}\left(\sqrt{2}\right) = \frac{3\pi}{4}$$

cos⁻¹($\frac{\sqrt{2}}{2}$)
Q2

SECTION 4.7

**Solve in the appropriate interval
(function value – one answer).**

$$\sin^{-1}(1) =$$

$$\tan^{-1}(0) =$$

SECTION 4.7

**Solve in the appropriate interval
(function value – one answer).**

$$\sin^{-1}(1) = \frac{\pi}{2} \quad \text{+}$$

$$\tan^{-1}(0) = 0 \quad \text{+}$$

$\frac{y}{x}$