Trig Ch. 6 review

Test Ch. 6 Tues.

whiteboards

1 graph either tan or cot
1 graph either sec or csc

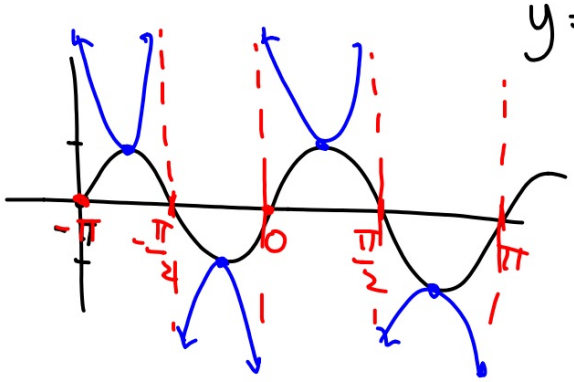
Lesson 6-7 *(Pages 395–403)*

Graph each function.

1. $y = \cot\left(\theta - \frac{\pi}{4}\right)$

2. $y = \sec\theta + 2$

3. $y = \csc(2\theta + 2\pi)$



$y = \csc 2(\theta + \pi)$

$\frac{2\pi}{2} = \text{per}$

1 write eqtn of inverse

Lesson 6-8 *(Pages 405–412)*

Find each value.

1. $\text{Cos}^{-1} 0$
2. $\text{Arcsin } 0$
3. $\cos(\text{Tan}^{-1} 1)$
4. $\text{Cos}^{-1}\left(\tan \frac{3\pi}{4}\right)$
5. $\sin\left(\text{Cos}^{-1} \frac{1}{2} + \text{Sin}^{-1} 0\right)$
6. $\cos\left(2 \text{ Sin}^{-1} \frac{\sqrt{3}}{2}\right)$

The table shows the average monthly temperatures for Ann Arbor, Michigan. Write a sinusoidal function that models the average monthly temperatures, using $t = 1$ to represent January. Temperatures are in degrees Fahrenheit (°F).

Jan.	30°
Feb.	34°
Mar.	45°
Apr.	59°
May	71°
June	80°
July	84°
Aug.	81°
Sept.	74°
Oct.	62°
Nov.	48°
Dec.	35°

Write an equation to model the data. Use your model to predict the average monthly temperature for July.

Write an equation of the sine function with each amplitude, period, phase shift, and vertical shift

4. amplitude = 2, period = 2π, phase shift = π, vertical shift = -1

Lesson 6-1 *(Pages 343–351)*

Change each degree measure to radian measure in terms of π.

1. $120°$
2. $280°$
3. $-440°$

Change each radian measure to degree measure. Round to the nearest tenth.

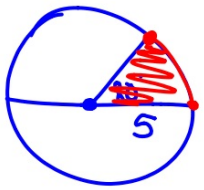
5. $\frac{8\pi}{3}$

6. $\frac{5\pi}{12}$

7. -2

8. 10.5

13. The diameter of a circle is 10 inches. If a central angle measures 80°, find the length of intercepted arc.



$\frac{80}{360}(\pi \cdot 10)$

7.0 in

$\frac{80}{360}(\pi \cdot 25)$

17.4 in^2

Lesson 6-2 *(Pages 352–358)*

Determine each angular displacement in radians. Round to the nearest tenth.

1. 5 revolutions $\frac{2\pi}{1 \text{ rev}}$

2. 3.8 revolutions

3. 14.2 revolutions

Determine each angular velocity. Round to the nearest tenth.

4. 2.1 revolutions in 5 seconds

5. 1.5 revolutions in 2 minutes

$$\frac{2.1 \text{ rev}}{5 \text{ sec}} \cdot \frac{2\pi}{1 \text{ rev}}$$

Lesson 6-3 *(Pages 359–366)*

Find each value by referring to the graph of the sine or cosine function.

1. $\cos 4\pi$
2. $\sin 8\pi$
3. $\sin \frac{3\pi}{2}$

Lesson 6-4 *(Pages 368–377)*

State the amplitude and period for each function. Then graph each function.

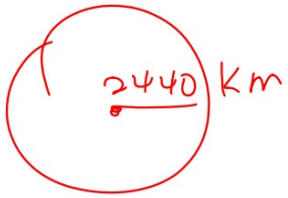
1. $y = 2 \cos \theta$

2. $y = -3 \sin 0.5\theta$

3. $y = \frac{1}{2} \cos \frac{\theta}{4}$

6.2.

40

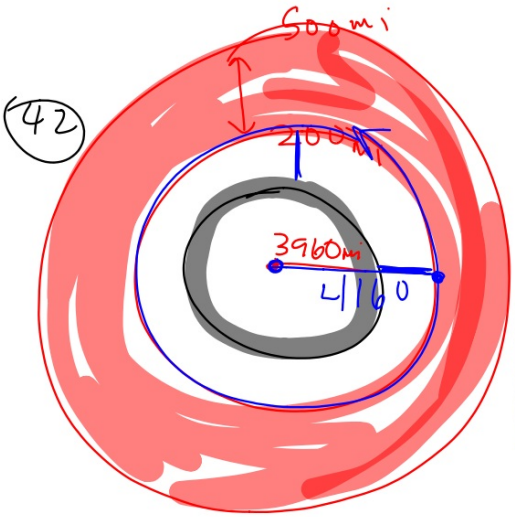


1407.6 hr = 1 rev

$$V = (2440\,\text{km})\left(\frac{1\ \text{rev}}{1407.6\ \text{hr}}\right)\cdot\frac{2\pi\ \text{rad}}{1\ \text{rev}}$$

$$\frac{2440(2\pi)}{1407.6}\ \frac{\text{km}}{\text{hr}}$$

(42)



$r = 17{,}000 \frac{mi}{hr}$

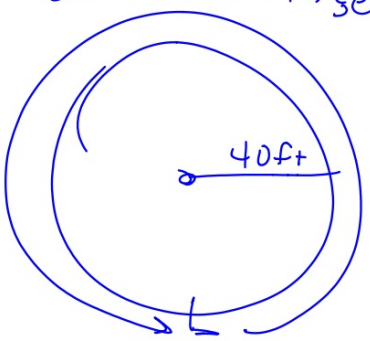
$V = r \cdot w$

$r \quad r$

$$w = \frac{V}{r}$$

$\frac{17000 \text{ mi}}{4160 \text{ mi}} \frac{rad}{hr}$ $\quad 4.1 \frac{rad}{hr}$

36. 1 rev = 45 sec



$$v = (40\text{ft})\left(\frac{1\text{ rev}}{45\text{ s}}\right)\cdot\frac{2\pi\text{ r}}{1\text{ rev}}$$

$$= 5.6\ \frac{\text{ft}}{\text{s}}$$

$v = 8\text{ ft/s}$ time = 1 rev

$$\frac{v = r\omega}{r \quad r} \qquad \omega = \frac{v}{r} = \frac{8\text{ ft}}{40\text{ ft}} = \frac{8\text{ rad}}{40\text{ s}}\cdot\frac{1\text{ rev}}{2\pi\text{ rad}} = 0.032\ \frac{\text{rev}}{\text{s}}$$

31 $\frac{1}{0.032}$ 3.125 $\frac{\text{s}}{\text{rev}}$