Trig Ch. 6 review

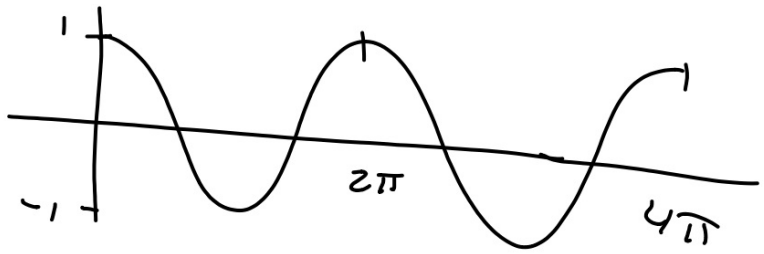
Quiz 6.3-6.4 moves to Thurs.

MCT 6.1-6.4 moves to Mon.

Lesson 6-3 *(Pages 359–366)*

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

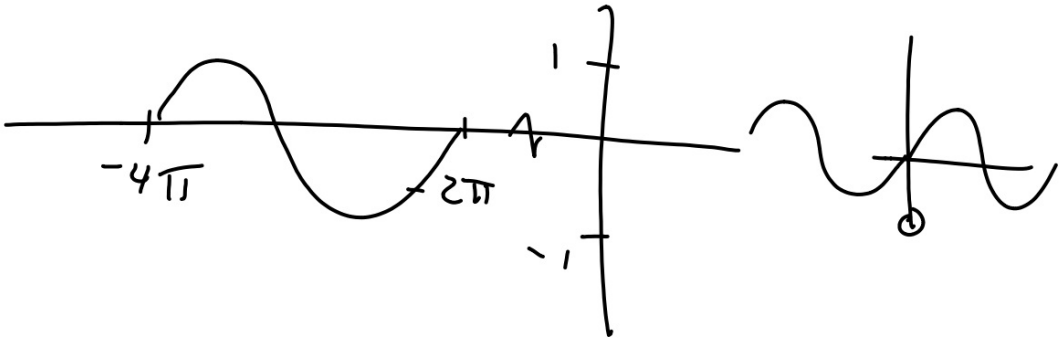
1. $\cos 4\pi = 1$
2. $\sin 8\pi$
3. $\sin \frac{3\pi}{2}$



Graph each function for the given interval.

4. $y = \sin x, -4\pi \leq x \leq -2\pi$

5. $y = \cos x, -\frac{9\pi}{2} \leq x \leq -\frac{5\pi}{2}$



Lesson 6-4 *(Pages 368–377)*

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

1. $y = 2\cos\theta$

$|2|$

$A = 2$

$P = 2\pi$

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

$\frac{2\pi}{0.5} = x$

$\frac{2}{1} \rightarrow \frac{2\pi}{T}$

$\frac{1}{2}$

3

4π

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

MCQ

p.377

2π

Write an equation of the cosine function with each amplitude and period.

6. amplitude $= \frac{3}{5}$, period $= 4\pi$

7. amplitude $= 0.25$, period $= 8$

$y = \frac{3}{5}\cos\left(\frac{1}{2}\theta\right)$ $\qquad$ $y = 0.25\cos\left(\frac{\pi}{4}\theta\right)$

$\frac{2\pi}{n} = \frac{4\pi}{1}$ $\qquad$ $\frac{2\pi}{n} = \frac{8}{1}$

$\frac{4\pi n}{4\pi} = \frac{2\pi}{4\pi}$ $\quad n = \frac{1}{2}$ $\qquad$ $\frac{8n}{8} = \frac{2\pi}{8} = \frac{1}{4}\pi$

Lesson 6-1 *(Pages 343–351)*

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

1. $120°$ 2. $280°$ 3. $-440°$

$$\frac{180^\circ}{\pi} = \frac{280^\circ}{x_r}$$

$$\frac{180x}{180} = \frac{280\pi}{180} \qquad x = \frac{14}{9}\pi = \frac{14\pi}{9}$$

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

$$\frac{180^\circ}{\pi \text{ rad}} = \frac{x^\circ}{\frac{5\pi}{12} \text{ r}}$$

$$\pi x = 180 \cdot \frac{5\pi}{12}$$

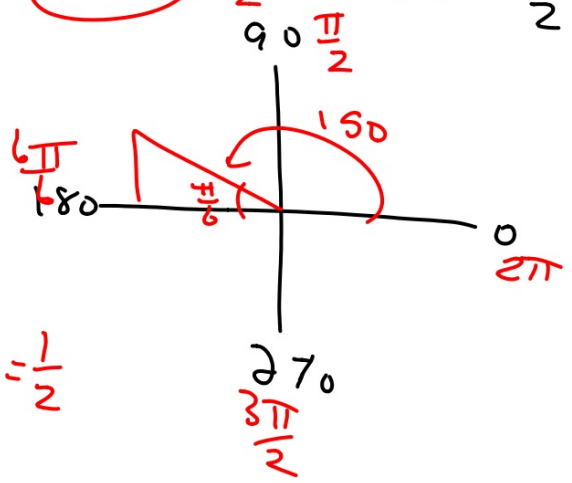
$$\frac{\pi x}{\pi} = \frac{900}{12}\frac{\pi}{\pi} \qquad x = 75^\circ$$

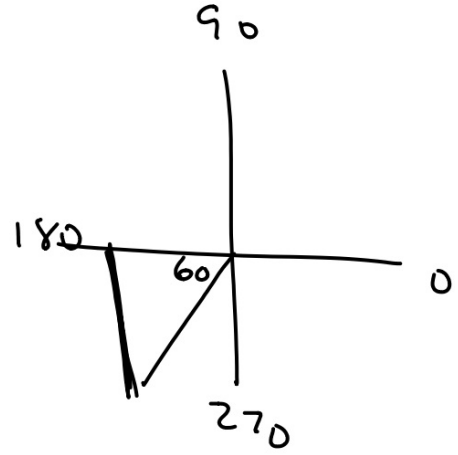
Special angles

Evaluate each expression.

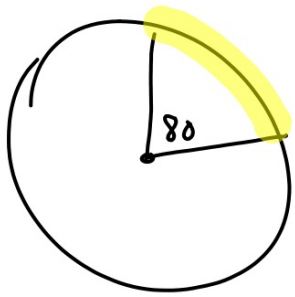
9. $\sin \frac{5\pi}{6}$ $= \frac{1}{2}$

10. $\sin \frac{4\pi}{3}$ $= -\frac{\sqrt{3}}{2}$





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

Lesson 6-2 *(Pages 352–358)*

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

1. 5 revolutions
2. 3.8 revolutions
3. 14.2 revolutions

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

10π rad

Determine each angular velocity. Round to the nearest tenth.

4. 2.1 revolutions in 5 seconds

5. 1.5 revolutions in 2 minutes

$$\omega = \frac{\text{rad}}{\text{time}}$$

$$\frac{2.1 \text{ rev}}{5 \text{ sec}} \cdot \frac{2\pi \text{ rad}}{1 \text{ rev}} \qquad 2.6 \frac{\text{rad}}{5}$$

⑥

$V = r \cdot \omega$

$\frac{V}{r} \quad \uparrow r \uparrow$

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

$55 \frac{mi}{hr} = 10cm$

$3m \quad \frac{8\pi \text{ rad}}{s} \quad \frac{55\,mi}{10cm\,hr} \quad \frac{5280ft}{1mi} \quad \frac{12in}{1ft} \quad \frac{2.54cm}{1in} = \frac{\text{rad}}{hr}$

88139.2

$V = 3m \cdot \frac{8\pi \text{ rad}}{s} = 24\pi \frac{m}{s} \approx 75.4 \frac{m}{s}$

=

$$88{,}139.2\ \frac{\cancel{\text{rad}}}{\cancel{\text{hr}}} \cdot \frac{1\ \cancel{\text{hr}}}{60\ \cancel{\text{min}}} \cdot \frac{1\ \cancel{\text{min}}}{60\ \text{s}} \cdot \frac{1\ \text{rev}}{2\pi\ \cancel{\text{rad}}} \approx 39.1\ \frac{\text{rev}}{\text{s}}$$