Test #1: Chapter 5
Mth 164-280

Name: _____

Important Dates/Times: <u>Turn This Test in By-</u>

Tuesday, 7:00PM, 03/30/10 = 10 point bonus
Tuesday, 7:00PM, 04/06/10 = as graded
Wednesday, 8:00AM, 04/07/10 = max(25 point penalty, 0 grade)
Thursday, 8:00AM, 04/08/10 = max(50 point penalty, 0 grade)
Friday, 8:00AM, 04/09/10 = max(75 point penalty, 0 grade)
Any Date Later = 0 grade

Instructions: Print this test from the PDF file on Blackboard. Show all work on these pages. You may use the back of the pages, if necessary. Put the answers in the answer block(s) if provided. If instructed, round the answer to the specified precision. If instructed to provide the exact answer, use π or a radical expression ($\sqrt{}$).

1. Convert 300° to exact radian measure. Express your answer in terms of π.

   Answer:

2. Find the supplement of an angle whose radian measure is $\frac{7\pi}{12}$. Express your answer in terms of π.

   Answer:

3. Find the length (to the nearest hundredth of an inch) of an arc that subtends a central angle of 105° in a circle of radius 12 inches.

   Answer:

4. A wheel is rotating at 6 revolutions per second. Find the angular speed in radians per second (round to the nearest hundredth of a radian).

Answer:

5. A wheel with a diameter of 26 inches is rotating at 15 radians per second. Find the linear speed (in feet per second) of a point on the edge of the wheel. Round your answer to the nearest foot per second.

Answer:

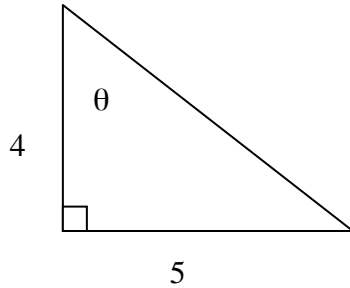6. If θ is an acute angle and $\tan\theta = \frac{5}{9}$, find the exact value of $\csc\theta$.

Answer:

7. Use a calculator to find the value of $\csc 42°$ to the nearest ten-thousandth.

Answer:

8. Find the exact value of: $\sin\frac{5\pi}{6}\cos\frac{7\pi}{6}$.

Answer:

9. Find the exact values of the six trigonometric functions of the angle θ for the right triangle below.

Function	Value
Sin	
Cos	
Tan	
Cot	
Sec	
Csc	

4

5

θ

10. Find the exact value of $\sec \theta$ where $\sin \theta = \frac{1}{2}$ and $\tan \theta = -\frac{\sqrt{3}}{3}$.

Answer:

11. Express $\dfrac{\csc^2 \theta - 1}{\csc^2 \theta}$ as a single term that involves the cosine function.

Answer:

12. State the period and amplitude of:
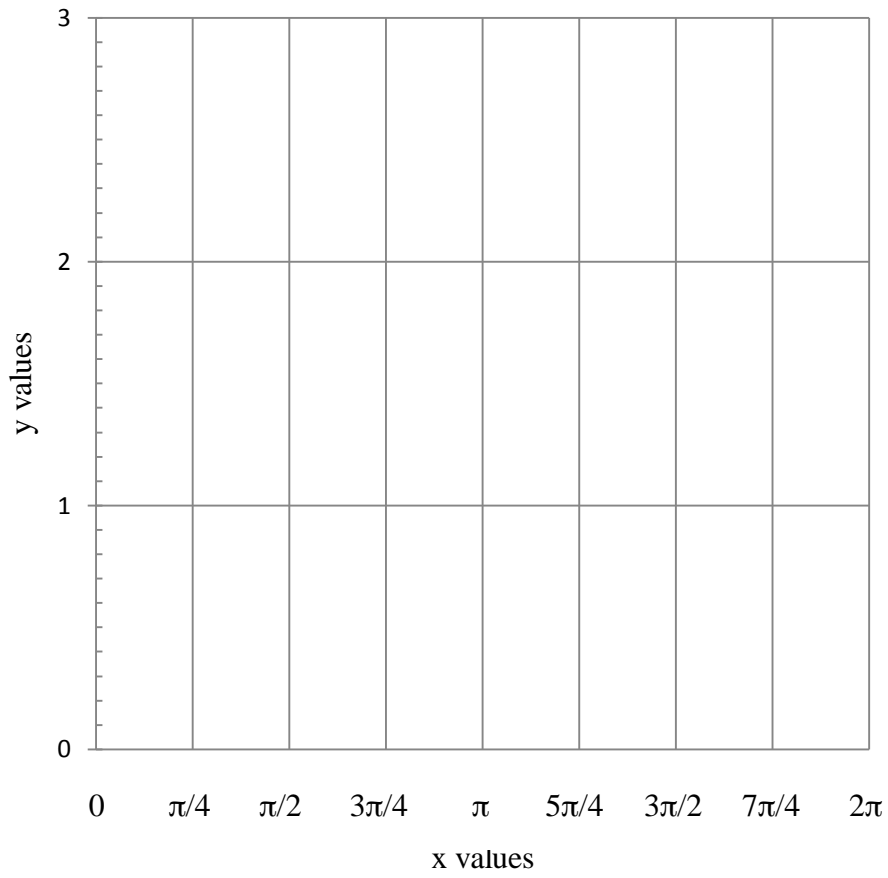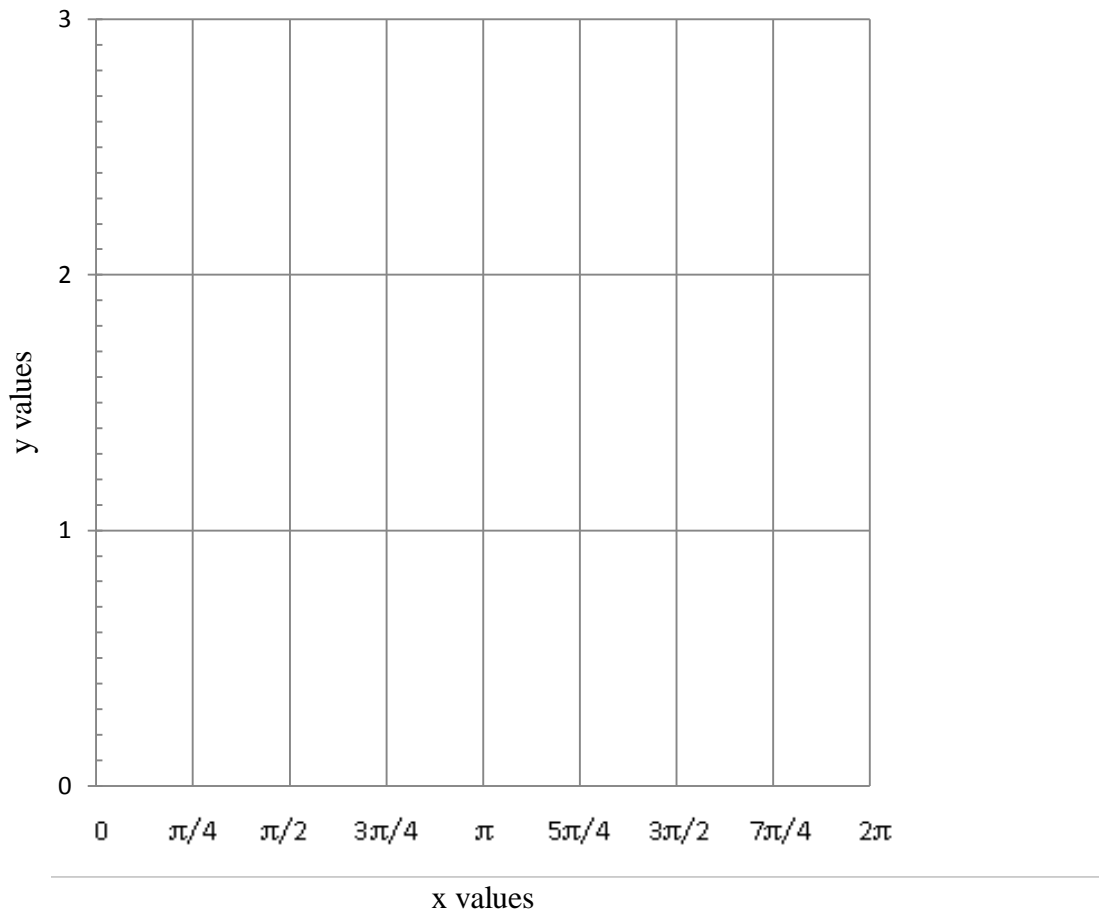
$$y = -2 \sin \frac{1}{2} x$$

Period:

Amplitude:

13. Find the height of a building (to the nearest tenth of a foot) if the angle of elevation to the top of the building changes from 20.0° to 35.0° as the observer moves a distance of 60 feet toward the building.

Answer:

14. Graph $y = 3 \sin \dfrac{x}{2}$ for $0 \le x \le 2\pi$.

15. Graph $y = 2\cos\left(x + \frac{\pi}{4}\right)$ for $0 \le x \le 2\pi$.

16. Graph $y = tan(2x)$ for $-\pi \leq x \leq \pi$.