

Math 1730-07 Test #3

Name \_\_\_\_\_ Chapters 5 and 6 100 pts. Fall 2004 Score: \_\_\_\_\_

1. Sketch a triangle that has acute angle  $2$  and find the other five trigonometric

function values of  $2$ , given that  $\sec \theta = \frac{7}{2}$ .

$\sin 2 =$

$\csc 2 =$

$\cos 2 =$

$\sec \theta = \frac{7}{2}$ .

$\tan 2 =$

$\cot 2 =$

2. Find an angle between  $\theta$  and  $2\pi$  that is coterminal with  $\frac{17\pi}{6}$ .

3. A sector of a circle of radius 24 mi has an area of  $288 \text{ mi}^2$ . Find the central angle of the sector.

4. A 96-ft tree cast a shadow that is 120 ft long. What is the angle of elevation of the sun?

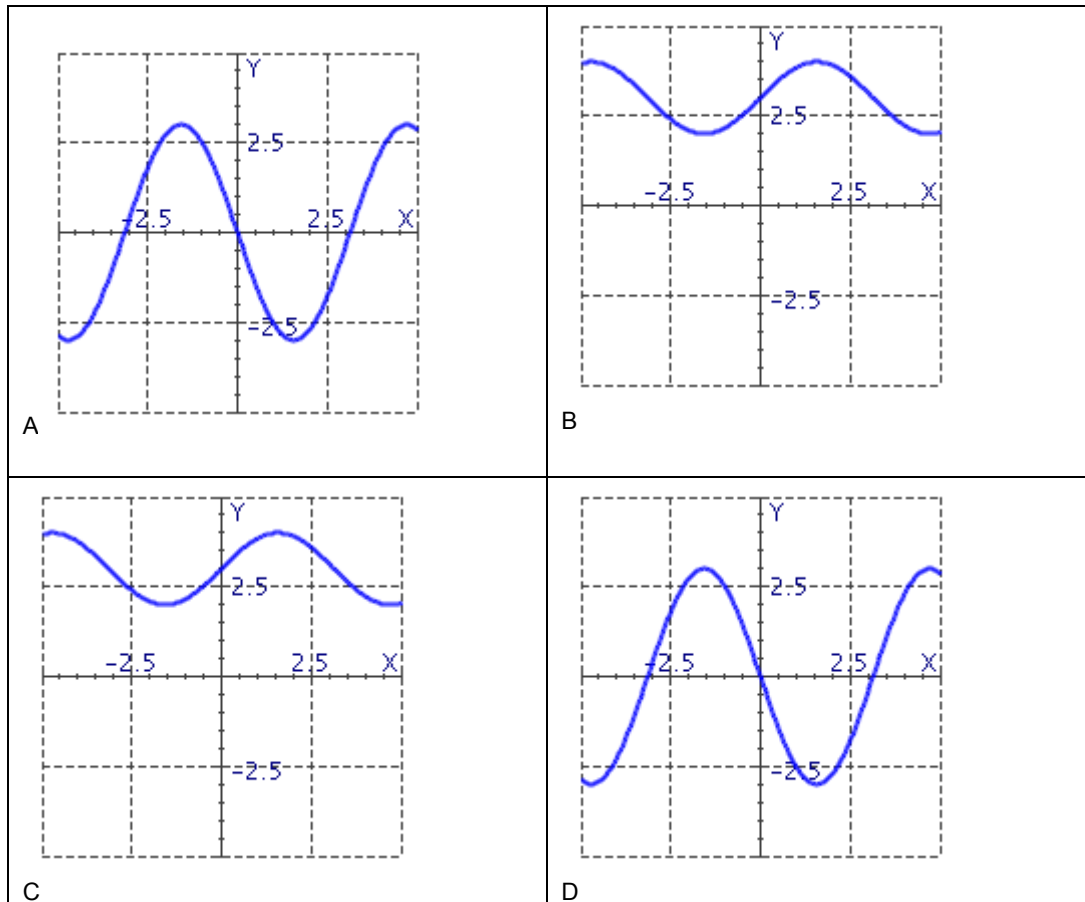
5. Find the exact function value  $\tan 750^\circ$ .

6. Sketch and solve the given triangle;  $\angle A = 50^\circ$ ,  $\angle B = 68^\circ$ ,  $c = 230$ .

7. A fisherman leaves his home port and heads in the direction  $N 70^\circ W$ . He travels 30 mi and reaches Egg Island. The next day he sails  $N 10^\circ E$  for 50 mi, reaching Forrest Island. Find the distance between the fisherman's home port and the Forrest Island.

8. Find the terminal point  $P(x, y)$  on the unit circle determined by  $t = \frac{-3\pi}{4}$ .

9. Graph the function  $y = 3 \sin x$  and circle the correct answer.



10. Let  $y = 5 \cos\left(\frac{\pi}{4} + 3x\right)$ .

a. Find the amplitude.

b. Find the period.

c. Find the phase shift.