Math 112 - _____ _____ NAME: _____ Ave quiz % =
Test 3A –spring 2012 100 Ave HW % =
Sec 8.7-8.8, 9.1-9.5 & 13.1-13.3 SEAT: _____ Test 1. 2. 7 3 =
Show all your work. Partial credit is based on your work shown! **Total =**
10pts **Round answers to 2 decimal places.** Total /5 = semester % =

1. Solve for the missing side in a triangle where a = 3, c = 2, and angle B = 110°.

10pts

2. In a triangle if side a = 3 inches, b = 4 inches, and angle A = 10°, find angles B and C.

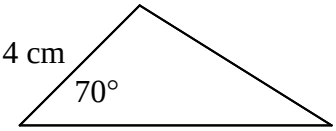
Find the area of each triangle. Neither triangle is a right triangle. Round the answers to two decimal places and **include appropriate units** with your answer. **Show all your work.**

5pts

3 a. sides a = 10 feet, b = 8 ft., and c = 5 ft.

5pts

3b.



10 pts **Show all your work.**

4. Suppose you are headed toward a plateau 60 meters high. If the angle of elevation to the top of the plateau is 25° , how far are you from the base of the plateau? _____ **Draw a sketch** to illustrate this problem.

5. **Solve for** θ; give answers as exact values, in fractional forms of π, on the interval $0 \le \theta < 2\pi$.

8 pts **Show all your work.**

a. $\sec^2 \theta = 4$

10 pts **Show all your work.**

b. $2 \sin^2 \theta + 3 \sin \theta = -1$

8pts

6. The displacement, d, (in feet) of an object at time t (in seconds) is given by $d = -3\sin(\pi t)$.

[Include units with your answers.]

a. In this simple harmonic motion, what is the maximum displacement from its rest position? _____

b. What is the time required for one oscillation?_____

c. Draw a sketch to illustrate this motion. Label each axis with appropriate units.

8pts

7. a. Write out the terms in the indicated sequence and then find the sum.

$$\sum_{n=1}^{5}(n+3)^2$$

b. Use the sum(seq(…)) feature of your graphing calculator to find the sum of the first 28 terms of this sequence. Write down what you type into your calculator and then indicate the result.

8pts

8. Write the next <u>two terms</u> for each sequence and then write the <u>nth term</u> for each sequence.

a. $\frac{2}{1}, \frac{4}{5}, \frac{6}{25}, \frac{8}{125}, \frac{10}{625}, \quad , \quad , \ldots$

b. $\frac{1}{1\cdot 2}, \frac{1}{2\cdot 3}, \frac{1}{3\cdot 4}, \frac{1}{4\cdot 5}, \quad , \quad , \ldots$

8pts **Show all your work.**

9. $\sum_{k=1}^{\infty} 4\left(\frac{1}{2}\right)^{k-1}$ a. What is the first term of this infinite geometric sequence? _____

b. What is the common ratio? _____

c. What is the sum of the infinite geometric sequence?

10pts **Show all your work.**

10. a. What type of sequence is: 7, 16, 25, 34, 43, 52, …? _____

b. Write a formula for the nth term.

c. What is the 25th term in this sequence?

d. What is the sum of the first 25 terms of this sequence?