Precalculus Ch6 Review #1 Name_____Period_____

1. Find the area of a triangle with side lengths of 8 m, 9 m, and 14 m.

2. Two edges of a triangular pool meet at a $70°$ angle. If the two edges have lengths of 25 feet and 15 feet, ***find the area*** of the pool.

3. Given $m\angle A = 42°,\ b = 52,\ c = 78$
   Draw and label a triangle (or triangles, if multiple solutions) and **find** a.

4. Given $m\angle B = 71°,\ c = 26,\ b = 8$
   Draw and label a triangle (or triangles, if multiple solutions) and **find** $m\angle A$.

5. Given $m\angle A = 46°,\ a = 40,\ b = 50$
Draw and label a triangle (or triangles, if multiple solutions) and **find** $m\angle B$.

6. Given $m\angle B = 105°,\ b = 40,\ c = 20$
Draw and label a triangle (or triangles, if multiple solutions) and **find** $m\angle C$.

7. Evaluate and write in trigonometric and standard form (standard answers in exact form):

$$\left[2\left(\cos 210° + i\sin 210°\right)\right]^3$$

8. Evaluate and write in trigonometric and standard form:

$$\left[5\left(\cos\frac{\pi}{10}+i\sin\frac{\pi}{10}\right)\right]^4$$

9. Perform the indicated operation and express solutions in ***trigonometric form***.

(a) $\left[7(\cos 25°+i\sin 25°)\right]\left[3(\cos 31°+i\sin 31°)\right]$

(b) $\dfrac{18(\cos 30°+i\sin 30°)}{6(\cos 47°+i\sin 47°)}$

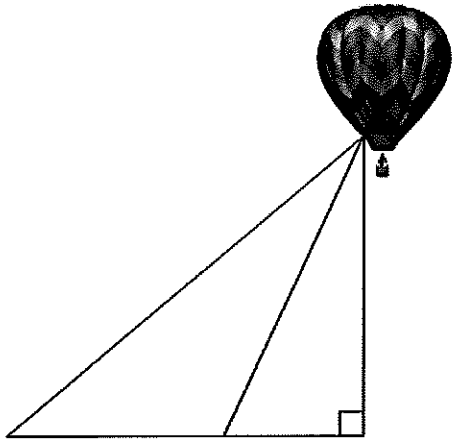
10. Sketch and write the following in **trigonometric form** (***answer must be in radian form...no calculator***):

$4-4\sqrt{3}\,i$

11. Find the fourth roots of: $-625i$

Leave answer in trigonometric form using degrees.

12. A balloon is tethered to the ground using two cables. The angles of elevation made by the cables with the ground are 30° and 49°. If the points where the cables attach to the ground are 100 feet apart, ***how high up is the balloon?***



13. On a map, Minneapolis is 6.5 inches due west of Albany, Phoenix, is 8.5 inches from Minneapolis, and Phoenix is 14.5 inches from Albany.

a) What is the navigational bearing from Phoenix to Minneapolis?

b) What is the navigational bearing from Phoenix to Albany?