Test Unit 3 Precalculus Name _____ _____

Show all work on your own paper.

I. Multiple Choice

1. Given ΔABC with $m\angle B = 34^\circ$, $m\angle A = 90^\circ$, and $c = 14.7$ cm. Then $a =$
   A) 17.7 cm B) 9.92 cm C) 16.6 cm D) 8.81 E) 22.14 cm

2. In ΔCAM, $m\angle M = 137^\circ$, $a = 31.6$ ft, and $c = 42.8$ ft. Then $m =$
   A) 21.8 ft B) 38.8 ft C) 65.7 ft D) 69.3 ft E) 72.1 ft

3. In ΔMEG, $m = 28$ cm, $e = 17$ cm, and $g = 13$ cm. The measure of the ***smallest*** angle is
   A) 15.51° B) 18.27° C) 24.2° D) 137.5°
   E) Not possible (no such triangle)

4. . In ΔPEG, $p = 12$ cm, $e = 20$ cm, and $g = 32$ cm. Then $m\angle G =$
   A) 2° B) 15.12° C) 18.27° D) 38.12°
   E) Not possible (no such triangle)

II. Free Response (SHOW ALL WORK!!)

5. Determine the area of ΔMRP if $m = 8$ in, $p = 6$ in, and $m\angle R = 34^\circ$.

6. In ΔMAY, you are given the measures of the three sides of the triangle. Explain thoroughly how you would determine the measures of the three angles of the triangle.

7. In ΔXYZ, $m\angle X = 13^\circ$, $x = 12$ cm, and $y = 15$ cm. Determine the length of side z.

8. In ΔABC, $m\angle A = 31^\circ$, $a = 3$ cm, and $b = 10$ cm. Determine the length of side c.

9. The angles of elevation to an airplane from two points A and B on level ground are 52° and 67°, respectively. The points A and B are 4 miles apart, and the airplane is east of both points in the same vertical plane. Determine the altitude of the plane.

10. Jack and Jill both start at point A. They each walk in a straight line at an anlge of 105° to each other. After 45 minutes Jack has wlaked 4.5km and Jill has walked 6km. How far apart are they?