Basic Trig Concepts Mock Test / Review Name_____

Section 1: Angle Measures

Convert each measure into degrees, minutes, and seconds. Round to the nearest second.

1. 23.653°

2. 245.417°

Convert from degrees, minutes, and seconds to decimal form. Round to the nearest thousandths.

3. 25° 12' 45"

4. 96° 29' 11"

Convert from degrees to radians.

5. 250°

6. 125°

Convert from radians to degrees

7. $\frac{7}{3}\pi$

8. $\frac{4}{5}\pi$

Find the standard position of each angle with coterminal side found [0° , 360°], also identify which quadrant the angle falls in.

9. 8427°

10. 2692°

Find the reference angle for each of the following

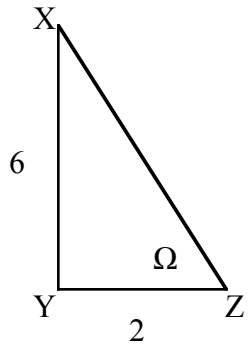
11. 350°

12. 165°

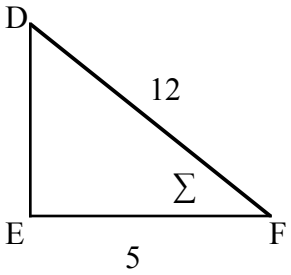
Section 2: Trig Functions

Find the values for the six trig functions.

13.



14.



Find the values for the six trig functions.

15. $\left(4 , -3 \right)$

16. $\left(0 , 7 \right)$

Solve the following using right triangle trig.

17. In ΔXYZ, $X = 90^\circ$ find y to the nearest tenth if $Z = 23^\circ$ and $x = 8.6$

18. In ΔHGM, $G = 90^\circ$ find h to the nearest tenth if $M = 40^\circ$ and $m = 15.9$

Section 3: Trig Laws

Using law of sines solve the triangle to the nearest tenth.

19. In ΔNMF, $N = 67^\circ$, $M = 44^\circ$, and $m = 23.7$

20. In ΔABC, $A = 103^\circ$, $C = 28^\circ$, and $b = 89.9$

Determine the number of triangles possible.

21. In ΔEFK, $E = 25^\circ$, $f = 30$, and $e = 23.7$

22. In ΔJKL, $K = 64^\circ$, $j = 60$, and $k = 45.3$

Using law of cosines solve the triangle to the nearest tenth for all angles.

23. In ΔPQR, $p = 8$, $q = 13$, and $r = 10$

24. In ΔRST, $r = 24$, $s = 15$, and $t = 18$

Section 4: Classifying Triangles

Consider the lengths of the sides for the proposed triangle. First determine if the triangle can exist, then classify the triangle as acute, right, or obtuse. If no triangle is possible then state it as such.

25. $d = 5$, $e = 7$, $f = 13$

26. $a = 12$, $b = 13$, $c = 5$

27. $x = 6$, $y = 9$, $z = 14$

28. $q = 22$, $r = 20$, $t = 18$

Section 5: Areas of Triangles

Use the determinant of a matrix to find the area of a triangle.

29. Vertices are $\left(2, -3 \right), \left(7, -2 \right), \left(-4, 9 \right)$

30. Vertices are $\left(6, -2 \right), \left(11, 4 \right), \left(1, -5 \right)$

Use Heron's Formula to find the area of a triangle.

31. g = 11, h = 4, k = 7

32. a = 9, b = 13, c = 6

Use trig to find the area of the triangle.

33. A = 20˚, a = 19, C = 64˚

34. x = 66, y = 90, Z = 58˚

Section 6: Finding Solutions by Inspection

This is a review of the last chapter. Be sure to check out zeros or restrictions along with proposed answers from argument on the number line to test for final solutions.

35. $\sqrt{x-4}+3 \le 8$

36. $\frac{3}{x-3} - \frac{5}{x+4} > \frac{2}{3}$

37. $\frac{17}{x^2-25} < \frac{7}{x-5} + \frac{3}{x+5}$