Math 1316 – Trigonometry **Assignment 1** **Name** \_\_\_\_\_\_\_\_\_\_\_\_\_

*Instructor*: Fred Khoury

***Directions*:** Show your work whenever possible: a correct answer is worth 0 point without any supporting work.

1. (3 *points*) Your professor needs to cut an arc for the top of an entrance way.

The arc needs to be **2*a*** wide (NP) and ***b*** high (QR).

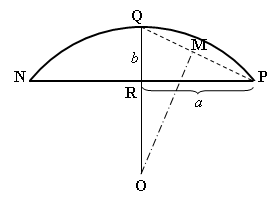


Figure above:

*a*: is the half length of the chord NP

*b*: is the distance from the midpoint of chord NP to the circle. (QR)

*c*: is the distance QP.

*r*: is the radius of the circle (OQ)

M: Midpoint of the segment QP.

Find a ***formula*** for the radius ***r*** in function of ***a*** and ***b*.**

1. Given the rectangle to the right (all your answers in Radical Form - *no decimal*)
2. (1 *points*) Find the measures of A, B, C, D, E, and F angles

45°

30°

A

B

C

D

E

F

***c***

***a***

***b***

***d***

***f***

***e***

**1**

***g***

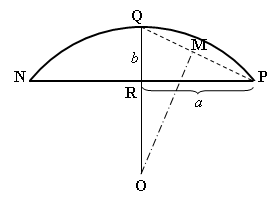
***h***

1. (2 *points*) Find the sides *a* thru *h*.
2. (4 *points*) Fill up the table

|  |  |  |  |
| --- | --- | --- | --- |
| *θ* | sin*θ* | cos*θ* | tan*θ* |
| 15° |  |  |  |
| 75° |  |  |  |

1. 

Triangle *OQM*: 

Triangle *QRP*: 









Triangle ORP:















1. Given the rectangle to the right
2. Find the measures of A, B, C, D, E, and F angles







45°

30°

A

B

C

D

E

F

***c***

***a***

***b***

***d***

***f***

***e***

**1**

***g***

***h***







1. Find the sides *a* thru *h*.























|  |  |  |  |
| --- | --- | --- | --- |
| *θ* | sin*θ* | cos*θ* | tan*θ* |
| 15° |  |  |  |
| 75° |  |  |  |





1. Fill up the table (*no decimal*)