**Math 1316 – Trigonometry** ***Exam* 2 *Review***

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1. Convert to exact radians.
2.  *b*) 390° *c*) 144° *d*) 249.8°
3. Convert to exact degrees
4.  *b*)  *c*) 
5. Find the exact circular function value
6.  *b*)  *c*) 
7. A wheel of radius 5 inches rotates at the rate of 20 revolutions per minute.
   1. Find the angular velocity of a point on the surface of the wheel in radians per minute.
   2. Find the linear velocity of a point on the surface of the wheel in inches per minute.
   3. How far does a point on the surface of the wheel travel in 30 *seconds*?
8. A particle is moving along a circle of radius 4 inches. It completes 15 revolutions every minute. For each of the following, round your answer to the nearest tenth of a unit.
9. Find the angular velocity of the particle in radians per minute.
10. Find the linear velocity of the particle in inches per minute.
11. The sector formed by a central angle of  has an area of  sq ft. Find the radius of the circle.
12. A circle of radius 8 cm has a central angle  measuring .
13. Find the length of the arc of the circle determined by .
14. Find the area of the sector of the circle determined by .
15. Sketch one cycle of each equation.

*a*)  *b*) 

*c*)  *d*) 

*e*)  *f*) 

1. Let . Find each of the following:
2. the period of *f*
3. the amplitude of *f*
4. the phase shift
5. the range of *f*
6. Find an equation of the form  or  for each of the following graphs:

|  |  |
| --- | --- |
| *a*) | *b*) |

***Answers***

1. *a*)  ***rad*** *b*)  ***rad*** *c*)  ***rad*** *d*) 4.36 ***rad***
2. *a*)  *b*) 157.5° *c*) 405°
3. *a*)  *b*)  *c*) 4.124
4. *a*)  rad/min *b*)  in/min *c*)  in
5. *a*) 94.2 rad/min *b*) 377.0 in/min
6. 
7. *a*) ≈ 7.819 *cm* *b*) 31.264 



-2

2





2

4

1. *a*) *b*)



-2

2







-2

2



*c*) *d*)







-2

2

-3

3

6

3

*e*) *f*)

1. *a*)  *b*) 2 *c*)  *d*) [–1,3]
2. *a*) *b*) 