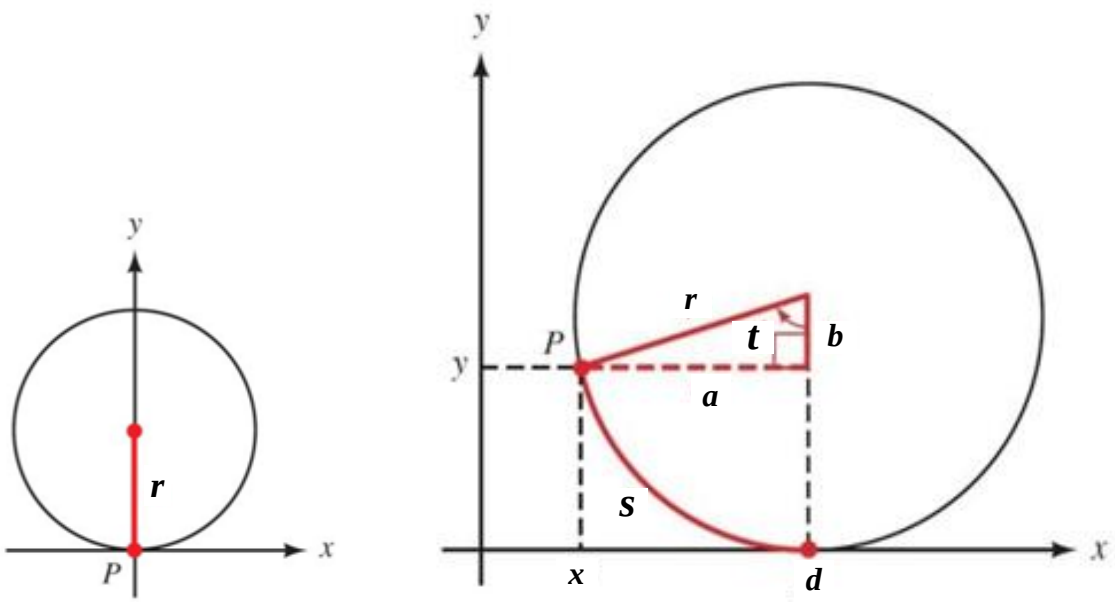
Math 1316 – Trigonometry **Assignment 3** **Name** _____

Instructor: Fred Khoury

1.



a) If *d* is the distance that the circle has rolled then what is the length of the arc?

b) Find a relationship between *d* and *t* from part (***a***)

c) Find equations for *x* and *y* in terms of a, b, *r*, and *d*

d) Find *a*, *b*, *x*, and *y* in terms of *r* and *t*

e) How long it will take for the point *P* to get to the top of the wheel, if the wheel radius is 4 *ft* and turns with an angular velocity of 5 radians per minute.

2. Find the solution(s) for: $\cos 2x + \cos 4x = \cos x$