1. Consider the graph of y = tan x.   
(a) How does it show that the tangent of 90 degrees is undefined?  
(b) What are other undefined x values?  
(c) What is the value of the tangent of angles that are close to 90 degrees (say 89.9 degrees and 90.01 degrees)?   
(d) How does the graph show this?

2. A nautical mile depends on latitude. It is defined as length of a minute of arc of the earth's radius. The formula is N(P) = 6066 - 31 cos 2P, where P is the latitude in degrees.   
(a) Using the Library and other course resources, find the exact latitude (to 4 decimal places) of where you live, used to live, work, or used to work (include the zip code).   
(b) Using the latitude found in part a and the formula N(P), find the length of a nautical mile to the nearest foot at that location.   
(c) Next, use the formula N(P) to find the latitude where the nautical mile is 6051 feet.   
(d) Name two cities in the Northern Hemisphere and two in the Southern that are close to the latitude found in part c.

3. When graphed using polar coordinates, the center of a regular nonagon is at the origin and one vertex is at (6, 0 degrees) or (6, 0 radians). Find the polar coordinates of the other vertices in both degrees and radians.

Click [option 1](http://www.mathematicshelpcentral.com/graph_paper.htm) or [option 2](http://www.richardmartino.com/math/polar.htm)  for polar coordinate graph paper.

**In your own words, please post a response to the Discussion**