DC FELLOWS PROGRAM
MATH IMMERSION SUMMER COURSE

GEOMETRY AND TRIGONOMETRY
JUNE 3, 2008

EXERCISES

(1) If $\sec\theta = 3$ for some $0 < \theta < \pi/2$, find $\sin\theta$, $\cot\theta$, and $\csc\theta$.

(2) Solve for x, assume $0 < x \le 2\pi$:
  - $\sec\theta = 2$
  - $\cos x = 1 - \sin x$
  - $\cos^2 x = \sin^2 x$

(3) Consider $\triangle ABC$ having side AB with length 5, side BC with length 7, and $\angle B = 42°$. Solve the triangle, that is, find the length of the third side and the measure of the other angles.

(4) Solve the triangle having sides lengths 5, 7, and 9.

(5) Convert the polar coordinates $(3, \frac{3\pi}{2})$ to rectilinear coordinates.

(6) Convert the rectilinear coordinates $(-2, -5)$ to polar coordinates.