1. Solve the equation: $\log_2 \left(\frac{3}{2} - x\right) + 1 = 2\log_2 x$ (4 pts)

2. If the point $(a, 3)$ lies on the terminal side of $\theta = \frac{2\pi}{3}$, then find the value of: (3pts)

   (i) a (ii) $\sin\theta,\ \sec 2\theta,\ \tan 3\theta$

3. (a) If $\alpha = -1310°$, then find the smallest positive angle coterminal with α and   (3 pts)
      the reference angle of α.

   (b) Find all values of θ, $0° < \theta < 360°$, that satisfies $\csc\theta = -\frac{2}{\sqrt{3}}$, $\tan\theta < 0$.