

Name : \_\_\_\_\_ ID. # : \_\_\_\_\_ SER. # : \_\_\_\_\_

1. Solve the equation:  $\log_{\frac{1}{3}}(9x - 6) + 1 = 2\log_{\frac{1}{3}} x$  (4 pts)

2. (a) If  $\cot \alpha = -\frac{5}{12}$ ,  $\cos \alpha > 0$ , then find  $\csc \alpha$ . (4 pts)

(b) Find the value of  $(\tan \frac{7\pi}{4})(\sec \frac{5\pi}{3}) + \cot \frac{17\pi}{6}$

3. Each tire of a truck has a radius of 0.4 meter. The tires are rotating at 500 revolutions per minute. Find the speed of the truck in kilometer per hour. (3pts)