Exercise

1. The **mtcars** dataset was extracted from the 1974 *Motor Trend* US magazine. (1) Is the mpg variable from a normal distribution? (2) Set x1 as mpg with am=0 and x2 as am=1. Is the difference between of samples (x1 and x2) significantly different from zero? Use one-tailed test. What do your results indicate?

2. When the sample size is very large, the confidence intervals is given by the following formula:

$$\overline{x} \pm z_{1-\alpha/2} \frac{s}{\sqrt{n}}$$

where

s = standard deviation of the sample

n = number of observations

$z_{1-\alpha/2}$ = critical z value

Find a 95% confidence intervals of the NOxEmissions$LNOx variable (robustbase package).