(8 points - 15 minutes)

1. **Use the data given here to test the claim that the linear correlation between fuel economy (miles per gallon) and speed (miles per hour) is negative. Assume the test vehicles were selected at random.**

(Use α = 0.01 and do not use Table A.6)

Vehicle	(X) Speed (mi/hr)	(Y) Fuel Economy (mi/gal)
1	26	30.7
2	34	22.7
3	39	19.0
4	58	23.8
5	61	15.5
6	78	17.5

Claim: _____

H₀: _____

H₁: _____

(6 points - 10 minutes)

2. **Would the conclusion of your test change if the correlation were the same but the sample had included 28 vehicles? Do not answer just "yes" or "no". Prove your case.**