Using the midpoint formula, calculate elasticity for each of the following changes in demand by a household.

**P1 P2 Q1 Q2**

**Demand for:**

a. Long-distance telephone service $0.25/min $0.15/min 300min/month 400min/mth

b. Orange juice 1.49/qt 1.89/qt 14quart/month 12qt/month

c. Big Macs 2.89 1.00 3 per week 6 per week

d. Cooked shrimp $9/ lb $12/lb 2 lb/month 1.5 lb/ month