

## ANSWER KEY TO CHALLENGE SHEET

### IGNITION SYSTEM CHALLENGE 3

**Customer's Concern:** My car just doesn't feel like it has any power when I am driving up hills.

**Customer Vehicle:** Mercury Grand Marquis.

#### **Possible Causes of This Challenge:**

1. Defective vacuum or centrifugal spark advance components.
2. Defective electronic spark advance system.
3. Weak ignition coil.
4. Damaged distributor cap or rotor.
5. Defective spark plugs or cables.
6. Excessive retarded ignition timing.

#### **Safety First Practices to Follow:**

1. Wear safety glasses at all times.
2. Connect vehicle's exhaust system to a vent hose in a closed shop.
3. Make sure vehicle is in Park or Neutral and parking brake is set.
4. To prevent electrical shock, do not handle ignition components while engine is running.

#### **Tools and Equipment Required:**

1. Vehicle service information.
2. Hand tools.
3. Engine diagnostic machine or oscilloscope.
4. Digital multimeter.
5. Timing light.