**CDX Distance Learning**

**Exercise #47**

**Engine Performance Case Study #1**

**Estimated Completion Time:** 30–60 mins.

**Student Name:** Click or tap here to enter text.

Read the vehicle information, customer complaint, and provided data to answer the following questions. Think of the questions as a step-by-step diagnostic process.

**Vehicle:** 2010 Chevrolet Malibu, 3.5 L engine

**Complaint:** Vehicle cranks, but will not start

**Specifications:** Fuel pressure: 56–62 psi

**Compression:** 100 psi minimum; the lowest reading should not be less than 70% of the highest reading.

1. The technician cranks the engine to verify the problem. The engine cranking speed appears normal, but the engine does not start. What should the technician test next?
   1. Battery condition and state of charge
   2. Fuel pressure
   3. Charging system output
   4. Engine compression
2. The technician disconnects a fuel injector and plugs a Noid light into the wiring harness. When the engine is cranked, the Noid light flashes. What should the technician do?
   1. Check the power circuit to the injectors.
   2. Verify the PCM ground.
   3. Check the injector ground wires to the PCM.
   4. Injector pulse is okay. Run another test.
3. The technician performs a fuel pressure test. The fuel pressure is 57 psi. What should the technician do next?
   1. Replace the fuel pump.
   2. Test the fuel pressure regulator.
   3. Fuel pressure is okay. Run another test.
   4. Inspect the fuel filter for blockage.
4. The technician checks for a spark on all cylinders. There is no spark when the engine is cranked. What should the technician do next?
   1. Test the PCM ground circuit.
   2. Replace the ignition coils.
   3. Replace the spark plugs.
   4. Replace the spark plug wires.