**CDX Distance Learning**

**Exercise #47**

**Engine Performance Case Study #2**

**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:** 2008 Ford F150, 4 x 4, 5.4 L engine.

**Complaint:** Lacks performance, rough idle, MIL ON.

**Specifications:** Fuel pressure: 34–45 psi, (key ON, engine OFF)

**Compression:** 100 psi minimum; the lowest reading should not be less than 75% of the highest reading.

1. What diagnostic test should the technician perform first?
   1. Injector pulse on all cylinders (Noid light)
   2. Fuel pressure
   3. Compression test (all cylinders)
   4. Diagnostic trouble code scan
2. The technician scans the PCM and retrieves a code P0303 (cylinder three misfire). What is the *least* likely cause of this code?
   1. Faulty fuel pump
   2. Faulty fuel injector
   3. Faulty ignition coil (coil-on-plug)
   4. Engine mechanical issue
3. The technician unplugs the cylinder three injector and places a Noid light in the wiring harness. The Noid light flashes when the engine cranks. What does this tell the technician?
   1. The cylinder three injector is faulty.
   2. The injector circuit is normal.
   3. There is no power to the injector.
   4. There is an open wire injector ground wire.
4. The technician connects a fuel pressure gauge. With the key ON and engine OFF the pressure is 41 psi. When the technician actuates the number three injector, the pressure stays at 41 psi. What should the technician do next?
   1. Repair the PCM wiring.
   2. Replace the injector.
   3. Replace the fuel pump.
   4. Perform an ignition coil inspection.