

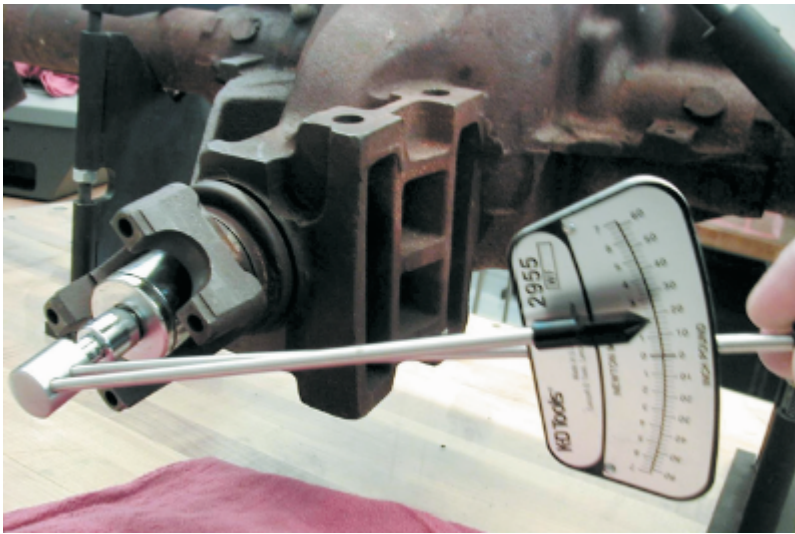
Name \_\_\_\_\_

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

1) Technician A says that ring gear runout can be caused by improper installation of the ring gear onto the differential case. Technician B says that ring gear runout can cause the backlash to be within specification at one portion of the ring gear and out of specification at another. Which technician is correct? 1) \_\_\_\_\_

- A) Technician A only
- B) Technician B only
- C) Both technicians
- D) Neither technician

2) What is the technician doing in this photograph? 2) \_\_\_\_\_



- A) Torquing the pinion nut
- B) Measuring pinion bearing preload
- C) Installing the pinion seal
- D) Removing the pinion nut

3) Backlash and carrier side bearing preload adjustments are made by \_\_\_\_\_. 3) \_\_\_\_\_

- A) Adding a shim behind the pinion shaft bearing
- B) Threaded adjusters or by changing shims
- C) Tightening or loosening the ring gear retainer bolts
- D) Using a case spreader

4) The backlash exceeds specifications. The technician should position the ring gear \_\_\_\_\_. 4) \_\_\_\_\_

- A) Closer to the drive pinion gear
- B) Further from the drive pinion gear
- C) Looser on the carrier
- D) With less torque on the carrier bolts

- 5) The total indicated runout (TIR) of a ring gear should be \_\_\_\_\_. 5) \_\_\_\_\_  
A) 0.002 inch (0.05 mm)  
B) 0.020 inch (0.5 mm)  
C) 0.200 inch (5.0 mm)  
D) 0.040 inch (1.0 mm)
- 6) A growling sound is heard from the rear of a rear-wheel-drive vehicle while coasting. 6) \_\_\_\_\_  
Technician A says that defective rear axle bearings may be the cause. Technician B says that defective drive pinion bearings may be the cause. Which technician is correct?  
A) Technician A only  
B) Technician B only  
C) Both technicians  
D) Neither technician
- 7) What is a typical pinion bearing preload, when measured with a torque wrench on the pinion 7) \_\_\_\_\_  
nut?  
A) 17–22 Inch-Pounds  
B) 50–75 Inch-Pounds  
C) 17–22 Foot-Pounds  
D) 120–150 Foot-Pounds
- 8) A worn or defective axle bearing will likely make what type of noise? 8) \_\_\_\_\_  
A) Chuckle  
B) Growl  
C) Clunk  
D) Chatter
- 9) While checking an axle ratio, a technician finds that it takes 34.5 turns of the driveshaft to 9) \_\_\_\_\_  
produce 20 turns of one rear tire; the other one is locked. What is the gear ratio?  
A) 3.45 to 1  
B) 2.33 to 1  
C) 2.0 to 1  
D) Not enough information to calculate
- 10) A low pitch rumble over 20 MPH (32 km/h) is likely caused by \_\_\_\_\_. 10) \_\_\_\_\_  
A) Incorrect backlash or pinion depth  
B) Incorrect gear oil or worn limited slip clutches  
C) Worn carrier bearings  
D) Worn U-joints

## Answer Key

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- 1) C  
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- 2) B  
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- 3) B  
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- 4) A  
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- 5) A  
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- 6) A  
Page Ref: 230
- 7) A  
Page Ref: 237
- 8) B  
Page Ref: 230
- 9) A  
Page Ref: 228
- 10) C  
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