Math for Automotive Technicians 1st edition Thompson Test Bank

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Unit 1 Basic Math Skills

MULTIPLE CHOICE

1. Last week an independent repair shop performed service on 27 compact cars, 18 midsize sedans, and 23 pickup trucks. Calculate the total number of vehicles serviced last week.
   A. 61 vehicles
   B. 68 vehicles
   C. 72 vehicles
   D. 94 vehicles

   ANS: B PTS: 1

2. A technician is paid weekly and earned four paychecks last month. The paycheck values were $758 for week one, $802 for week two, $793 for week three, and $813 for week four. Calculate the total monthly pay earned by the technician.
   A. $3,166.00
   B. $3,182.00
   C. $3,204.00
   D. $3,475.00

   ANS: A PTS: 1

3. A technician owes $398 for professional mechanic's tools. She plans to pay $175 this week toward her tool bill. Calculate how much she will owe after this payment is applied to her account.
   A. $219
   B. $220
   C. $223
   D. $257

   ANS: C PTS: 1

4. A transmission fluid and filter change is recommended at 75,000 miles. The vehicle has been driven 81,934 miles and the transmission fluid and filter change has not been performed. Calculate how many miles overdue the vehicle is for the transmission fluid and filter service.
   A. 6,745 miles
   B. 6,874 miles
   C. 6,912 miles
   D. 6,934 miles

   ANS: D PTS: 1

5. An eight-cylinder engine is tested for horsepower on a dynamometer. The engine produces 408 horsepower at 5,200 rpm. Calculate the horsepower per cylinder of this engine at 5,200 rpm.
   A. 49 horsepower per cylinder
   B. 51 horsepower per cylinder
   C. 53 horsepower per cylinder
   D. 57 horsepower per cylinder

   ANS: B PTS: 1

6. The intake lobe height on a camshaft is 44.320 mm and the exhaust lobe height is 43.989 mm. Calculate how much larger the intake lobe is on the camshaft compared to the exhaust lobe.
   A. 0.331 mm

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B. 0.339 mm
C. 0.345 mm
D. 0.495 mm

ANS: A PTS: 1

7. A 2 1/2″ lowering spring kit is being installed on a coupe. The starting ride height for the front wheel is 27 5/8″. Calculate the expected ride height after the lowering kit is installed.
A. 24 3/16″
B. 25 1/8″
C. 25 3/8″
D. 26 1/4″

ANS: B PTS: 1

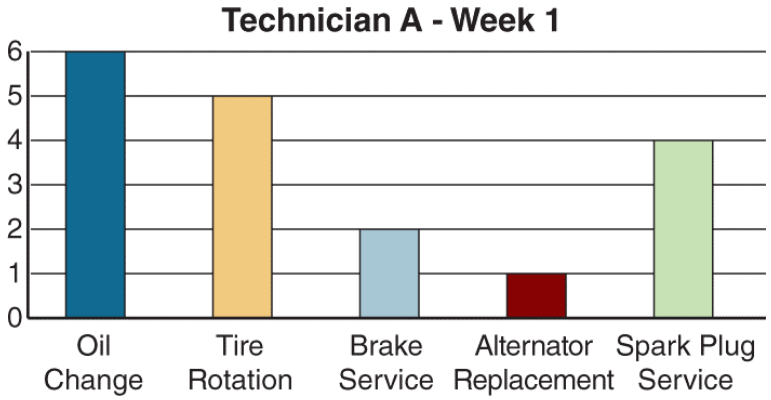
8. If a custom wheel measures 7″ wide, what is the wheel width in mm (25.4 mm in 1″)?
A. 172.3 mm
B. 177.8 mm
C. 182.35 mm
D. 189.5 mm

ANS: B PTS: 1

9. An air conditioning system requires 1.2 pounds of refrigerant. Calculate the amount of refrigerant required in kilograms (one pound is equal to 0.453 kilograms).
A. 0.4783 kg
B. 0.5436 kg
C. 0.5978 kg
D. 0.6173 kg

ANS: B PTS: 1

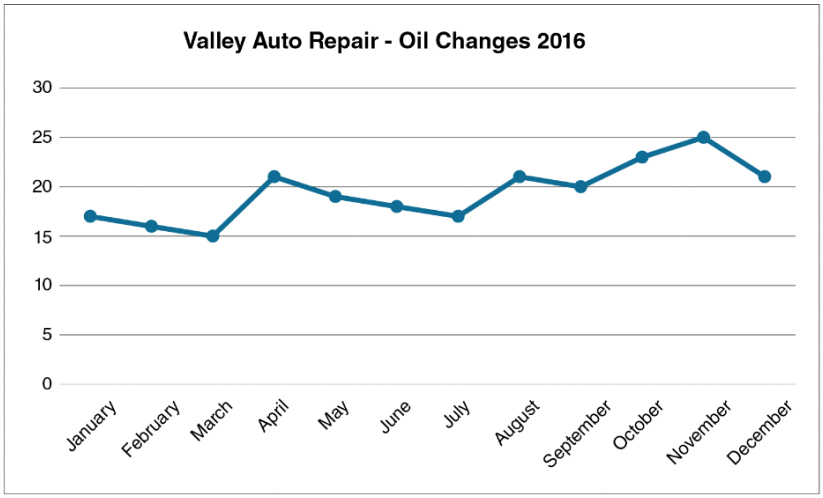
10. Analyze the graph shown. Identify which vehicle service procedure Technician A performed 4 times during Week 1.



A. Spark Plug Service
B. Alternator Replacement
C. Tire Rotation
D. Brake Service

ANS: A PTS: 1

11. Analyze the graph shown. Identify the month when 20 oil changes were performed.



A. February
B. July
C. August
D. September

ANS: D PTS: 1

12. Use the order of operations to solve the following formula: $x = 9(13 - 4) + 7(15 - 5)$
A. 116
B. 151
C. 324
D. 754.6

ANS: B PTS: 1

13. Use the order of operations to solve the following formula:

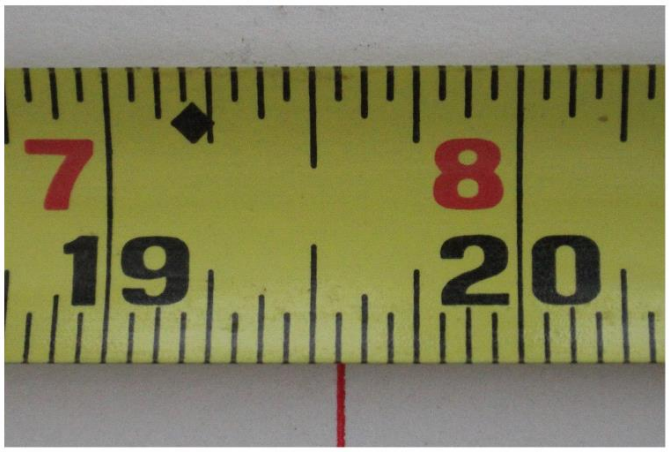
$$x = \frac{96 - 16}{8 \times 5} + 20^2$$

A. 98
B. 156
C. 350
D. 402

ANS: D PTS: 1

14. Use the tape measure scale to determine the measurement as indicated by the red line.

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A. 19 3/8″
B. 19 5/16″
C. 19 9/16″
D. 19 15/16″

ANS: C PTS: 1

15. The cylinder bore diameter specification range for a particular engine is 88.153 mm–88.159 mm. Analyze the measurements shown in the chart and determine which cylinder bore is out of specification.

Disc Brake Specifications	
Cylinder One	88.154 mm
Cylinder Two	88.158 mm
Cylinder Three	88.151 mm
Cylinder Four	88.158 mm

A. Cylinder One
B. Cylinder Two
C. Cylinder Three
D. Cylinder Four

ANS: C PTS: 1

16. 9 + 14 = ____
A. 23
B. 24
C. 25
D. 26

ANS: A PTS: 1

17. 267 + 1,367 = ____
A. 1,599
B. 1,603
C. 1,620
D. 1,634

ANS: D PTS: 1

18. 126 – 38 = ____

A. 85
B. 88
C. 91
D. 99

ANS: B PTS: 1

19. 47 – 61 = ____
A. –12
B. –14
C. –16
D. –21

ANS: B PTS: 1

20. 12 × 8 = ____
A. 48
B. 96
C. 98
D. 144

ANS: B PTS: 1

21. 16 × 21 = ____
A. 298
B. 299
C. 321
D. 336

ANS: D PTS: 1

22. 54 ÷ 9 = ____
A. 5
B. 6
C. 7
D. 8

ANS: B PTS: 1

23. 265.44 + 349.78 = ____
A. 605.13
B. 606.38
C. 615.22
D. 619.43

ANS: C PTS: 1

24. 47.708 + 51.387 = ____
A. 99.013
B. 99.026
C. 99.045
D. 99.095

ANS: D PTS: 1

25. 236.34 – 12.87 = ____

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A. 223.47
B. 225.87
C. 226.12
D. 229.09

ANS: A PTS: 1

26. 38.768 – 21.334 = ____
A. 15.980
B. 17.434
C. 18.903
D. 19.330

ANS: B PTS: 1

27. 2.5 × 1.7 = ____
A. 3.25
B. 3.50
C. 3.75
D. 4.25

ANS: D PTS: 1

28. 7.9 × 4.5 = ____
A. 33.90
B. 34.12
C. 35.55
D. 36.66

ANS: C PTS: 1

TRUE/FALSE

29. The fraction 5/25 has been reduced to lowest terms.

ANS: F PTS: 1

30. According to the table, a left front brake disc measured at 26.38 mm thickness is within specification.

Disc Brake Specifications	
Front Pad Thickness (new)	12.0 mm
Front Pad Thickness (minimum)	1.0 mm
Front Disc Thickness (new)	28.00 mm
Front Disc Thickness (minimum)	26.50 mm

ANS: F PTS: 1

31. The red line indicates a measurement of 56 1/8″ on the tape measure scale.



ANS: T PTS: 1

32. If a high-voltage battery in a hybrid vehicle produces 240 volts and is made up of 80 cells wired in series, each cell produces 3 volts.

ANS: T PTS: 1

33. If the left front brake disc measures 0.978″ and the right front brake disc measures 0.983″, the left disc is thicker.

ANS: F PTS: 1

34. If an eight-cylinder engine requires eight spark plugs and spark plugs cost $8.79 each, the total cost of the spark plugs for this engine will be $69.62.

ANS: F PTS: 1

35. If a dealership service department uses 24 cans of spray brake cleaner per week, it will use 1,386 cans in 52 weeks (1 year).

ANS: F PTS: 1

36. If a repair shop has 7 cases of 10W-30 full-synthetic oil in stock with 12 bottles in each case, the shop has a total of 84 bottles of this 10W-30 oil in stock.

ANS: T PTS: 1

37. 29.7 divided by 3.3 is 9.2.

ANS: F PTS: 1

38. A right front tire with 4/32″ of tread depth has less remaining tread depth than a left front tire with 6/32″ of tread depth.

ANS: T PTS: 1

COMPLETION

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39. 45 + 83 = _____

ANS: 128

PTS: 1

40. 56 + 128 = _____

ANS: 184

PTS: 1

41. 35 – 21 = _____

ANS: 14

PTS: 1

42. 546 – 378 = _____

ANS: 168

PTS: 1

43. 5 × 9 = _____

ANS: 45

PTS: 1

44. 125 × 15 = _____

ANS:
1,875
1875

PTS: 1

45. 18 ÷ 2 = _____

ANS: 9

PTS: 1

46. 125 ÷ 5 = _____

ANS: 25

PTS: 1

47. 180 ÷ 15 = _____

ANS: 12

PTS: 1

48. 8.8 ÷ 2.0 = _____

ANS: 4.4

PTS: 1

49. 27.3 _____ 29.4 (< or > or =)

ANS:
<
less than

PTS: 1

50. 7/8 _____ 9/16 (< or > or =)

ANS:
>
greater than

PTS: 1