LESSON 9-1

Practice A

Accuracy and Precision

Choose the more precise measurement in each pair.

1. 5 ft, 53 in. — 53 in.

2. 10 qt, 44 c — 44 c

3. 853 g, 1 kg — 853 g

Determine the number of significant digits in each measurement. Choose the letter for the best answer.

4. 3,000
(A) 1 **C** 3 **B** 2 **D** 4

5. 1.50
F 1 (H) 3 **G** 2 **J** 4

6. 3.405
A 1 **C** 3 **B** 2 (D) 4

7. 0.0006
(F) 1 **H** 5 **G** 4 **J** 6

8. 201
A 2 **C** 4 (B) 3 **D** 5

9. 50.020
F 2 **H** 4 **G** 3 (J) 5

Calculate. Find each answer with the correct number of significant digits in the box. Each answer can be used only once.

13.6	4.8	30	5	66	28	7.6	8	28.2	66.4	4.77	14

10. 19 − 5.4 = 14

11. 23.6 + 6 = 30

12. 11.8 − 7 = 5

13. 12.3 • 5.4 = 66

14. 6.0 • 4.7 = 28

15. 30.5 ÷ 4.0 = 7.6

16. 0.329 • 14.49 = 4.77

17. 58.3 + 8.12 = 66.4

18. 59.04 ÷ 2.09 = 28.25

19. 32.6 − 27.83 = 4.8

20. 9 − 1.4 = 8

21. 12.9 + 0.71 = 13.6

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LESSON 9-1

Practice B

Accuracy and Precision

Choose the more precise measurement in each pair.

1. 2 tons, 3,700 lb — 3,700 lb

2. 4 weeks, 27 days — 27 days

3. 3.5 m, 3.03 m — 3.03 m

4. 3 ft, 32 in. — 32 in.

5. 4.6 mL, 2.8 L — 4.6 mL

6. 15.8 km, 15 km — 15.8 km

Determine the number of significant digits in each measurement.

7. 5.801 4

8. 0.06 1

9. 75,000 2

10. 0.00007 1

11. 100,000,000 1

12. 300.080 6

13. 9.007 4

14. 0.840 3

15. 0.0050 2

Calculate. Use the correct number of significant digits in each answer.

16. 21 − 8.6 = 12

17. 47.6 + 8 = 56

18. 9.8 − 3 = 7

19. 31.3 − 24.78 = 6.5

20. 9.63 + 3.4 = 13.0

21. 15.7 + 0.82 = 16.5

22. 0.54 + 0.104 = 0.64

23. 102 − 2.77 = 99

24. 62 + 0.319 = 62

25. 52.7 • 2.3 = 120

26. 8.0 • 1.7 = 14

27. 20.5 ÷ 6.0 = 3.4

28. 23.9 • 14.4 = 344

29. 19.2 ÷ 0.03 = 600

30. 1,240 ÷ 4.025 = 308

31. 0.18 • 6.2 = 1.1

32. 95 ÷ 32 = 3.0

33. 74.3 • 0.22 = 16

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LESSON 9-1

Practice C

Accuracy and Precision

Choose the more precise measurement in each pair.

1. 6 L, 5,320 mL — 5,320 mL

2. 27 oz, 2 lb — 27 oz

3. 400 min, 6.5 hr — 400 min

4. 5 ft, 60 in. — 60 in.

5. 8.7 km, 870 m — 870 m

6. 8 cm, 2.5 cm — 2.5 cm

Determine the number of significant digits in each measurement.

7. 2.0801 5

8. 0.03 1

9. 10,500 3

10. 0.00307 3

11. 900,000,000 1

12. 302.80 5

13. 7.007 4

14. 0.840 3

15. 0.080 2

Calculate. Use the correct number of significant digits in each answer.

16. 170 − 6.8 = 160

17. 37.6 + 8 = 46

18. 2.8 ÷ 0.3 = 9

19. 51.37 − 24.7 = 26.7

20. 6.89 + 7.3 = 14.2

21. 95.7 + 9.893 = 105.6

22. 72.5 • 3.2 = 230

23. 2,600 • 4.71 = 12,000

24. 25 ÷ 7.04 = 3.6

Which unit is more precise?

25. quart, gallon quart

26. ounce, pound ounce

27. pint, cup cup

28. day, month day

29. gram, kilogram gram

30. inch, foot inch

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LESSON 9-1

Reteach

Accuracy and Precision

A measurement is more **precise** than another measurement if its unit of measure is smaller.

1. Which measurement is more precise, 14 cm or 140 mm?

a. 14 cm means the measure is to the nearest centimeter.

b. 140 mm means the measure is to the nearest millimeter.

c. Since a millimeter is a smaller measurement, 140 mm is more precise.

2. Which measurement is more precise, 5 ft or 50.1 ft?

a. 5 ft means the measure is to the nearest foot.

b. 50.1 ft means the measure is to the nearest tenth of a foot.

c. Since a tenth of a foot is a smaller measurement, 50.1 ft is more precise.

Choose the more precise measurement in each pair.

3. 7.5 m or 75 cm — 75 cm

4. 11.0 in. or 11 in. — 11.0 in.

5. 8.4 lb or 8 oz — 8 oz

You can find the number of **significant digits,** or all the digits that are known to be exact, by dividing a measurement by its smallest place value. The number of digits in the quotient is the number of significant digits.

Measurement	Smallest Place Value	Measurement ÷ Smallest Place Value	Number of Significant Digits
14 ft	1	14 ÷ 1 = 14	2
0.043 in.	0.001	0.043 ÷ 0.001 = 43	2
50.1 m	0.1	50.1 ÷ 0.1 = 501	3

Zeros to the left of a decimal point are not significant if there are no digits to the right of the decimal point.

910 contains 2 significant digits: 9 and 1.

Zeros after digits to the right of a decimal point are significant.

64.9500 contains 6 significant digits: 6, 4, 9, 5, and the two zeros.

Determine the number of significant digits.

6. 41.25 4

7. 30.6 3

8. 0.085 2

9. 1,207,000 4

10. 38.600 5

11. 4.00020 6

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