**Algebra IA** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1.4 Worksheet Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_

Precision and Significant Digits

**Choose the more precise measurement.**

1. 6.5 qt; 6.54 qt 2. 11.7 lb; 9 lb 3. 19 km; 21.3 km

4. 7.2 hr; 14 min 5. 3.1 in.; 7.02 ft 6. 1 kL; 1000 L

7. At her first volleyball practice of the season, Lilly was measured and told that she was 1.9 meters tall. When she got home that evening she asked her mother to measure her. Her mother told Lilly she was 2 meters tall. Which measure is more precise? Explain your answer.

8. A micrometer is a device used in mechanical engineering to measure very small distances. Suppose Tara and Kwan each measure the thickness of a sheet of notebook paper using a micrometer. Tara reports the thickness as 0.0001 millimeter and Kwan reports the thickness as 0.00015 millimeter.

Which of the two measurements is more precise? Explain your answer.

**Determine the number of significant digits in the measurement.**

9. 47.2 mi 10. 0.004 mm 11. 1002 yr 12. 3.20 gal

13. 2.6075 ft 14. 1.004 in. 15. 10.0500 sec 16. 0.0205 mL

17. The quotient 0.002 cm2 ÷ 0.0006 cm contains how many significant digits?

A. 1

B. 2

C. 3

D. 4

18. The product 10.1 in. × 21.01 in. contains how many significant digits?

A. 1

B. 2

C. 3

D. 4

**Perform the indicated operation. Write the answer with the correct number of significant digits.**

19. 6.2 qt – 1.19 qt 20. 4.1 yd × 6.7 yd 21. 11.1 cm + 49.9 cm

22. 17 m2 ÷ 0.20 m 23. 0.04 in. + 0.007 in. 24. 72.01 ft × 2.220 ft

25. The thickness of a penny, nickel, dime, and quarter are approximately 1.55 millimeters, 1.95 millimeters, 1.35 millimeters, and 1.75 millimeters, respectively. If a penny, nickel, dime, and quarter are stacked up, how high would the stack be? Give your answer using the correct number of significant digits.

26. The Willis Tower, formerly known as the Sears Tower, is located in Chicago, Illinois. Its base is a square with each side measuring approximately 675 feet. Using the correct number of significant digits, what are the perimeter and area of the base of the tower?

27. Brooke completed her flower garden by placing a circular water fountain at its center. If the radius of her fountain is 3 feet, what is the area of her fountain? Use the area equation A = πr2 where π = 3.14 and r = 3. Give your answer using the correct number of significant digits.