Name _____ Date _____ Class _____

Problem Solving
Precision and Accuracy

Write the correct answer.

1. Rolondo is measuring the length of his lawn. Using a board that is 10 feet long, he measures his lawn to be 70 feet long. He then uses his foot, which is 12 inches long, to measure his lawn to be 864 inches. Which is the more precise measurement? Which is the more precise tool?

   _____

2. A bolt used to assemble a car must have a length of 37.5 mm $\pm$ 4%. Does a bolt that is 39.3 mm long fall within the specified tolerance? Why or why not?

   _____

3. According to the Billiard Congress of America, BCA Equipment Specification, the diameter of a billiard ball is 2.25 inches with a tolerance of 0.005 inch. Which billiard ball(s) in the table below meet(s) this standard?

Ball	1	2	3	4	5
Diameter (in.)	2.255	2.249	2.251	2.250	2.2
Ball	6	7	8	9	10
Diameter (in.)	2.251	2.244	2.239	2.249	2.251
Ball	11	12	13	14	15
Diameter (in.)	2.250	2.219	2.247	2.257	2.288

   _____

Select the best answer.

4. Ann is measuring the capacity of a 16-oz water bottle. She first uses a measuring cup and finds that the water bottle holds 16.2 oz of water. She then uses a graduated cylinder and finds that the water bottle holds 16.18 oz of water. Which is the more precise measurement? Which is the more precise tool?

   A 16.2 oz; measuring cup

   B 16.2 oz; graduated cylinder

   C 16.18 oz; measuring cup

   D 16.18 oz; graduated cylinder

5. Ina added 32.155 milliliters (mL) of HCL to 64 mL of H_2O. How much solution does Ina have to the nearest milliliter?

   F 95 mL   H 97 mL

   G 96 mL   J 98 mL

6. Jesse mixed 8.24 oz of paprika with 12.23 oz of pepper. How much of the spice combination does Jesse have to the nearest tenth of an ounce?

   A 20.0 oz   C 20.5 oz

   B 20.4 oz   D 21.0 oz

7. An aquarium must be heated to 30°C $\pm$ 1.5%. What is the acceptable temperature range for this aquarium?

   F 25.5 °C–34.5 °C

   G 28.5 °C–31.5 °C

   H 29.55 °C–30.45 °C

   J 29.85 °C–30.15 °C

Holt McDougal Coordinate Algebra

Review for Mastery

1. hundredth; tenth; 73.71
2. 4.732; thousandth; hundredth; 4732 mL
3. tenth, thousandth; hundredth; 2
4. 37; 47; 37; 47
5. 3.19; 3.21; 3.19; 3.21
6. 0.05; 1.25; 1.25; 23.75; 1.25; 26.25; 23.75; 26.25
7. 0.02; 0.8; 0.8; 39.2; 0.8; 40.8; 39.2; 40.8

Challenge

1. 0.19°
2. 4.6°
3. 3000 km

Problem Solving

1. 864 in.; Rolondo's foot
2. No; it is too long
3. 1, 2, 3, 4, 5, 6, 9, 10, 11, 13
4. D
5. G
6. C
7. H

Reading Strategies

1. 7.0–9.0
2. 2.4–4.0
3. ±3
4. ±2.5
5. *B*
6. *A*

Answer Key for Unit 2

3-1 SOLVING TWO-STEP AND MULTI-STEP EQUATIONS

Practice A

1. 2; 10; 2
2. 3; 8; 4
3. 21; 9; 3
4. $t = -2$
5. $x = 5.4$
6. $r = -23$
7. $y = 3$
8. $b = 24$
9. $m = \dfrac{1}{8}$
10. $x = 6$
11. $y = -3$
12. $d = -1$
13. -8
14. $7x + 6 + 5x = 90$
15. $x = 7$

Practice B

1. $x = -1$
2. $y = 4$
3. $p = -7$
4. $m = -1$
5. $g = 8$
6. $h = 6$
7. $y = -50$
8. $n = \dfrac{1}{3}$
9. $t = -\dfrac{1}{3}$
10. $x = 3$
11. $b = -2$
12. $q = 3$
13. -4
14. -5
15. $3x - 5 + 2x = 90$; 19
16. 20 minutes

Practice C

1. $r = 3$
2. $w = -14$
3. $y = -4$
4. $f = 5$
5. $p = 10$
6. $r = 7$
7. $y = 27$
8. $h = \dfrac{7}{8}$
9. $m = 3$
10. $v = -\dfrac{1}{2}$
11. $b = -7$
12. $n = -\dfrac{5}{8}$
13. -10
14. -12
15. 30
16. $0.75x - 18.50 = 24.25$, 57 cookies

Review for Mastery

1. 4
2. 60
3. $\dfrac{5}{3}$
4. 5
5. $\dfrac{5}{4}$
6. -1
7. $\dfrac{25}{2}$

Challenge

1. 4 inches
2. 8 inches
3. 1 inch
4. 9 inches
5. 15 inches
6. 7 inches
7. 3 inches
8. 7 inches
9. 6 inches
10. 11 inches
11. 15 inches
12. 4 inches

Holt McDougal Coordinate Algebra