Geometry and Measurements

Answer Keys, Program 3: Worksheets 1 - 3

Each question on every worksheet offers the students the option of marking "Teacher" instead of or in conjunction with answering the question. The "Teacher" option is included to support student understanding and achievement. Students may have as much help and guidance as they need to understand concepts and master skills.

Instructors may decide whether to use the two or four point scoring rubric for constructed response problems (problems that use numbers, pictures, or words to justify/explain student answers). See the appendix for the complete rubrics.

Two -Point Scoring Rubric	Four-Point Scoring Rubric
2 – Complete	4 – Complete
1 – Partial	3 – Clear
0 – Inadequate	2 – Partial
	1 – Minimal
	0 - Inadequate

Worksheet 1

1. B. 3 inches
2. A. 9 sq. in.
3. D. 24 sq. in.
4. 42 desks. Answers should reflect the problem 7 x 6 = 42.
5. False. Answers should reflect that the 16 inch pizza is 4 times larger than the 8 inch pizza. 1) The radius of the 16" pizza is 8 so the surface area is 8 x 8 x π or 201 square inches (rounded to the nearest whole). The radius of a 8" pizza is 4 so the surface area is 4 x 4 x π or 50 square inches (rounded). 2) 201 ÷ 50 = 4 (rounded)
6. A. 1°F < 1°C
7. D. 120 cu. ft.
8. A. 158 sq. ft.
9. B. 7.5 sq. ft
10. 2 gallons. Answers should reflect the problems: 1) Paint needed: 8 x 55 = 440 square feet. 2) One gallon covers 250 square feet and two gallons covers 500 square feet. One gallon will not finish the project but two will have all of paint needed to do the job – with some left over.

Worksheet 2

1. 35 meters. Answers should reflect the problem 7 +7 +7 +7 +7 +7 +7 = 35 meters (or 5 x 7 = 35 meters).
2. C. 20 ft.
3. A. 38 ft.
4. A. $12.00
5. C. 21 cu. ft.
6. D. 62.5 ft.
7. Cone: 104 sq. in. Cylinder: 207 sq. in. Answers should reflect the solutions to the equations. 1) Cone: 3.14.x 6 x 8 ÷ 2 = 75.36 plus 3.14 x 9 = 28.26. 28.26 + 75.36 = 103.62 – rounded to 104 square feet. 2) Cylinder: 2 x 3 x 3.14 x 8 = 150.72 plus 2 x 3.14 x 3 x 3 = 56.52. 56.52 + 150.72 = 207.24 – rounded to 207 square feet.
8. 14 feet by 26 feet. Answers should reflect the solution to the problem. 1) Scale: 1 inch = 2 feet. 2) 2 x 7 = 14 feet and 2 x 13 = 26 feet.
9. C. 720 tiles
10. Answers may vary. Any combination of three factors that equal 360 but have a width greater than 3 inches with heights and lengths smaller than 10 and 12 should have a surface area smaller than the given cube. Possible solutions could include a cube of 4 x 9 x 10 inches or a cube of 5 x 8 x 9 inches.

Worksheet 3

1. A. the volume of the box
2. B. 50 inches
3. B. 8 x 5
4. A. 48 square inches
5. C. 55 feet
6. Answers will vary. Responses should reflect the following facts: 1) How to compute area and perimeter: A = *lh* and P = *s* + *s* + *s* + *s* (P = 2*l* +2*w* or P =4*s* for a square) and 2) The two rectangles should display two different sets of factors for the same number. For example, if a rectangle has an area of 36 square units, then the factors/sides could be:
    a. 4 by 9 – Area: 4 x 9 = 36 sq units, Perimeter: 4 + 4 + 9 + 9 = 26 units
    b. 3 by 12 – Area: 36 sq units, Perimeter: 30 units
    c. 2 by 18 – Area: 36 sq units, Perimeter: 40 units
    d. 6 by 6 – Area: 36 sq units, Perimeter: 24 units
7. 136 meters. Responses should reflect the solution to the problem: P = 2(*l*+4) + 2(*w*+4).
8. D. 432
9. C. The area is nine times as large as the previous area.
10. A. 1,004.8 cm3