**Math 6** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Unit 5: Area and Volume** Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Post Test**

**Knowledge and Understanding**

1. How could you determine the area of a shape without a formula for that shape?
2. Describe the difference between the types of units used to describe area and the types of units used to describe volume.

**Proficiency of Skills**

1. Determine the volume of the cube pictured below.

 in.

1. Find the area of the shaded section of the square below.

5 m

1. Find the area of the triangle pictured below.

12 cm

9 cm

5 cm

4 cm

1. Determine the area of the trapezoid.

1 cm

1 cm

18 cm

8 cm

1. The surface area of a rectangular prism can be found by using the formula, . Determine the surface area of a rectangular prism with a length of 6 cm, a width of 5 cm, and a height of 3 cm.
2. Find the area of the figure shown below.

5 ft

6 ft

16 ft

12 ft

**Application**

1. If carpet costs $6 per square yard, how much would it cost to carpet a rectangular room that is 5 yards wide and 11 yards long?
2. Daniel is making a plaque for his den. He started with the rectangular piece of wood and then cut off the two shaded isosceles triangles as illustrated below. What is the area of the remaining piece of wood?

3 ft

3 ft

8 ft

1. A rectangular prism is filled with small cubes of the same size. The bottom layer consists of 56 cubes, each with a volume of 5 cubic inches. If there are 4 layers of cubes in the prism, what is the volume of the rectangular prism?
2. A box is covered with decorative wrapping paper with no overlap. The net of the box is shown below.

10 in.

10 in.

2 in.

How many square inches of wrapping paper is needed to cover the surface area of the box?

1. Paxton wants to carpet his room with a 5 foot wide strip of carpet that goes around the outside of his room. If he leaves the inside as bare wood, what is the area of the carpet that he will need?

28 ft

36 ft

1. A fish tank is shown below. If the water level is 1 ½ inches below the top of the tank, what is the volume of the water in the tank?



12 in.

24 in.

16 in.

1. How many cubic inches are in a cubic foot?

|  |  |
| --- | --- |
| A. | 12 |
| B. | 24 |
| C. | 144 |
| D. | 1,728 |
|  |  |

|  |  |
| --- | --- |
|  |  |

1. Which of the following nets could NOT be folded to form a cube?

|  |  |  |  |
| --- | --- | --- | --- |
| A. |  | C. |  |
| B. |  | D. |  |

**Math 6**   
**Unit 5: Area and Volume**   
**Post Test Answer Key**

|  |  |  |
| --- | --- | --- |
| **Problem** | **Standard** | **Answer** |
| 1. | MCC6.G.1 | Possible answer: Decompose the shape into shapes that you know how to find the area of. |
| 2. | MCC6.G.2 | Possible answer: Area is measured in square units. It describes how many squares of that size are needed to cover the area. Volume is measured in cubic units. It describes how many cubes of that size are needed to fill the volume. |
| 3. | MCC6.G.2 | cubic inches |
| 4. | MCC6.G.1 | 12.5 m2 |
| 5. | MCC6.G.1 | 18 cm2 |
| 6. | MCC6.G.1 | 152 cm2 |
| 7. | MCC6.G.4 | 126 cm2 |
| 8. | MCC6.G.1 | 126 ft2 |
| 9. | MCC6.G.1 | $343.75 |
| 10. | MCC6.G.1 | 15 ft2 |
| 11. | MCC6.G.2 | 1120 in3 |
| 12. | MCC6.G.4 | 280 in2 |
| 13. | MCC6.G.4 | 48 cm2 |
| 14. | MCC6.G.1 | 540 ft2 |
| 15. | MCC6.G.2 | 4176 in3 |
| 16. | MCC6.G.2 | D |
| 17. | MCC6.G.2 | C |
| 18. | MCC6.G.1 | B |
| 19. | MCC6.G.4 | C |
| 20. | MCC6.G.2 | Two cakes would be needed.  If an eight inch cake serves four people, it could be sliced as shown where each slice is 4 inches by 4 inches.  4 in.  4 in.  If a twelve inch cake is sliced the same way, you can get nine servings from the cake. Since 18 servings are needed, one would need two twelve inch cakes.  4 in.  4 in. |