Shape and Space 2

Name:_____

10. If a cube has a surface area of 2.16 m^2, then which of the following equations represents the height, h, of the cube?

A. $h = \sqrt{\frac{2.16}{6}}$ m

B. $h = \sqrt{\frac{6}{2.16}}$ m

C. $h = \frac{2.16}{6}$ m

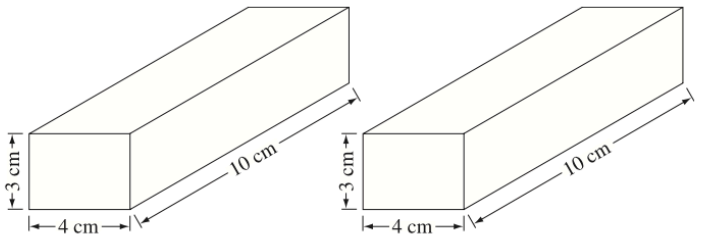
D. $h = 2.16 \times 6$ m

13. If the side length of a cube is tripled, then the surface area of the cube will increase by a factor of

A. 6
B. 9
C. 12
D. 27

Use the following information to answer numerical-response question 6.

Darren joins the rectangular prisms shown below to create a new rectangular prism that has the greatest possible surface area. He then paints all visible surfaces. After the paint dries, Darren separates the two prisms.



Numerical Response

6. The total area of both prisms that has **not** been painted is _____ cm^2.

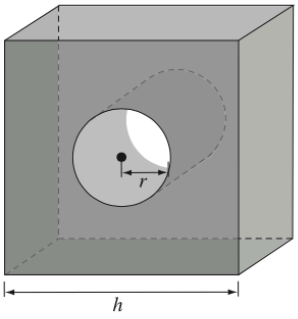
(Record your answer in the numerical-response section on the answer sheet.)

Shape and Space 2

Name:_____

Use the following information to answer question 13.

The 3-D object below is a **cube** with a right cylinder cut out.



13. Which expression represents the surface area of the 3-D object?

A. $6h^2 - 2\pi r^2 + 2\pi rh$

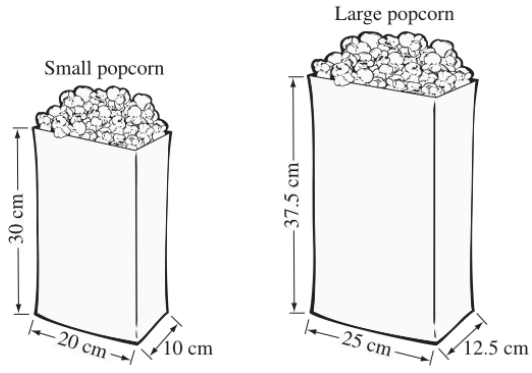
B. $4h^2 - 2\pi r^2 + 2\pi rh$

C. $6h^2 + 2\pi r^2 - 2\pi rh$

D. $4h^2 + 2\pi r^2 - 2\pi rh$

Use the following information to answer numerical-response question 2.

The local movie theatre sells two sizes of popcorn. The large bag of popcorn is a scale enlargement of the small bag.



Numerical Response

2. The difference between the exterior surface area of the large popcorn bag and the small popcorn bag is _____ cm^2.

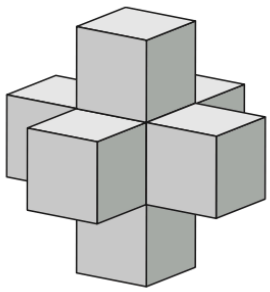
(Record your answer in the numerical-response section on the answer sheet.)

Shape and Space 2

Name:_____

Use the following information to answer question 13.

The following 3-D object is composed of identical cubes. The volume of the 3-D object is 56 cm^3.



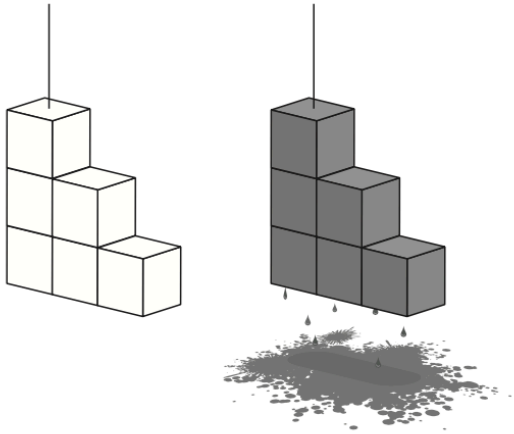
13. The surface area of the 3-D object above is

A. 30 cm^2
B. 60 cm^2
C. 120 cm^2
D. 144 cm^2

Use the following information to answer question 18.

A 3-D object made of 2 cm × 2 cm × 2 cm cubes is dipped in paint.

Unpainted Object **Painted Object**



18. If the painted object is separated into individual cubes, then the total area of the **unpainted** surfaces will be

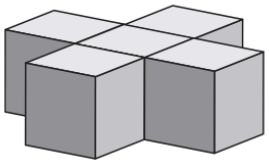
A. 12 cm^2
B. 24 cm^2
C. 32 cm^2
D. 48 cm^2

Shape and Space 2

Name:_____

Use the following information to answer question 14.

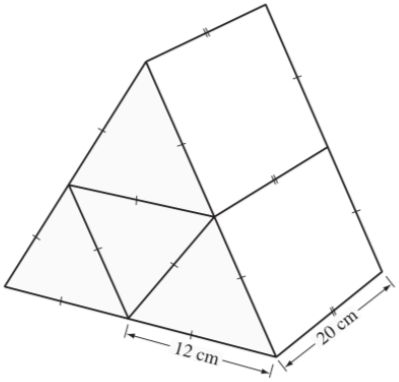
The following 3-D object is composed of identical cubes. The volume of each cube is 8 cm^3.



14. What is the **total** surface area of the 3-D object shown above?

A. 120 cm^2
B. 100 cm^2
C. 88 cm^2
D. 72 cm^2

Four identical triangular prisms are arranged together to form one large, triangular prism, as shown below. The five exterior surfaces of the large prism are then painted.



30. To the nearest square centimetre, what is the total area of the painted surfaces?

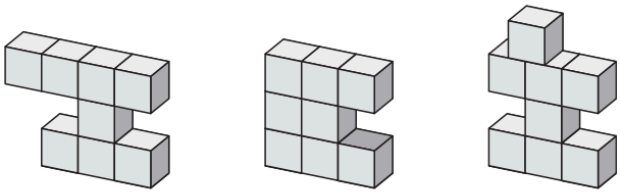
A. 1 939 cm^2
B. 2 016 cm^2
C. 2 659 cm^2
D. 2 736 cm^2

Shape and Space 2

Name:_____

Use the following information to answer question 34.

The three composite objects shown below are each constructed from 8 identical cubes.



Object **1** Object **2** Object **3**

34. Which of the following statements correctly describes the relationship between the composite objects?

A. Object 2 has a greater surface area than Object 1.

B. The surface areas of the three objects are the same.

C. Object 3 has a greater surface area than both Object 1 and Object 2.

D. The surface area of Object 1 is equal to the surface area of Object 3.