Exercise

Accelerated Math™: Thursday, April 2, 2015 1:14 PM

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PreAlg
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Subskills

97. Solve a problem involving the area of a 2-dimensional shape
98. Determine the area of shapes composed of triangles and quadrilaterals
99. WP: Determine the area of shapes composed of triangles and quadrilaterals
100. Determine the surface area of a 3-dimensional shape made from cubes
101. Determine the volume of a 3-dimensional shape made from cubes

1. The rectangular prism is made of 40 cubes. Each cube has an edge that measures 2 inches. What is the surface area of the prism?
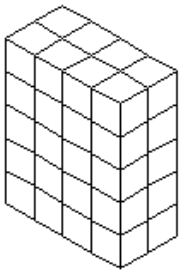

A. $152 \, \text{in}^2$

B. $320 \, \text{in}^2$

C. $640 \, \text{in}^2$

D. $304 \, \text{in}^2$

2. A triangle has an area of 24 square feet. Its height is 6 feet. What is the length of its base?

A. 8 ft

B. 4 ft

C. 6 ft

D. 10 ft

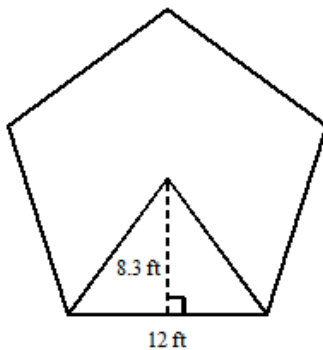3. The solid shape below is made up of cubes with edge lengths of 4 feet. What is the volume of the shape?
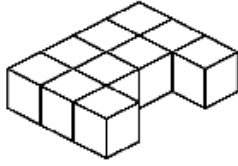
A. $640 \, \text{ft}^3$

B. $160 \, \text{ft}^3$

C. $576 \, \text{ft}^3$

D. $288 \, \text{ft}^3$

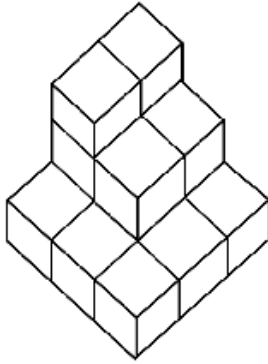4. The solid shape below is made up of cubes with edge lengths of 3 inches. What is the volume of the shape?
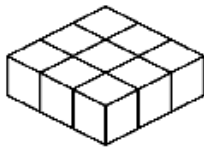
A. $270 \, \text{in}^3$

B. $81 \, \text{in}^3$

C. $243 \, \text{in}^3$

D. $135 \, \text{in}^3$

5. Several flower beds in a park are in the shape of regular pentagons. The figure below shows one of the beds. The height of the triangle is given to the nearest tenth. The area of the triangle is one-fifth of the area of the pentagon. What is the area of each bed?
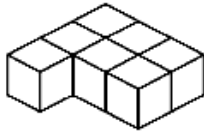

8.3 ft

12 ft

A. $249 \, \text{ft}^2$

B. $199.2 \, \text{ft}^2$

C. $498 \, \text{ft}^2$

D. $298.8 \, \text{ft}^2$

6. The solid shape below is made up of cubes with edge lengths of 4 feet. There are no cubes missing from the shape that are hidden from view. What is the volume of the shape?
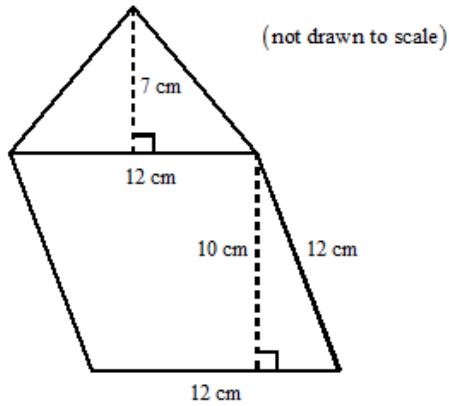

   A. $240 \, \text{ft}^3$

   B. $704 \, \text{ft}^3$

   C. $960 \, \text{ft}^3$

   D. $576 \, \text{ft}^3$

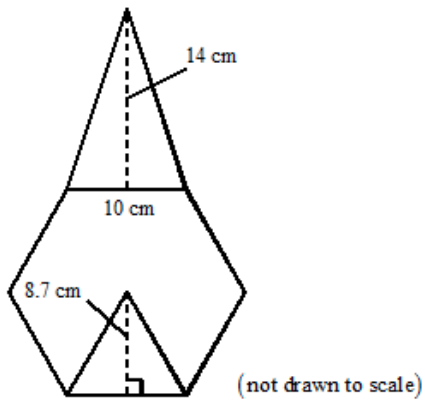7. The solid shape below is made of cubes with edge lengths of 3 inches. What is the surface area of the shape?

   A. $7 \, \text{in}^2$

   B. $189 \, \text{in}^2$

   C. $63 \, \text{in}^2$

   D. $234 \, \text{in}^2$

8. A parallelogram has an area of $42 \, \text{cm}^2$. The length of its base is 7 cm. What is its height?

   A. 3 cm

   B. 7 cm

   C. 18 cm

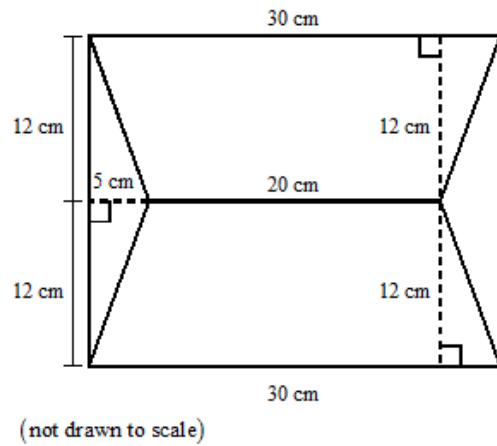   D. 6 cm

9. What is the area of the figure shown?

(not drawn to scale)

7 cm

12 cm

10 cm   12 cm

12 cm

A. 102 cm^2

B. 132 cm^2

C. 840 cm^2

D. 162 cm^2

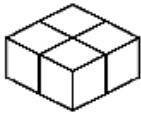**10.** What is the area of the figure shown? (The hexagon is a regular hexagon.)

14 cm

10 cm

8.7 cm

(not drawn to scale)

A. 331 cm^2

B. 1,218 cm^2

C. 662 cm^2

D. 592 cm^2

11. What is the area of the figure shown?

(not drawn to scale)

A. 208 cm^2

B. 660 cm^2

C. 1,260 cm^2

D. 360 cm^2

12. The solid shape below is made of cubes with edge lengths of 4 feet. What is the surface area of the shape?

A. 128 ft^2

B. 16 ft^2

C. 256 ft^2

D. 1,024 ft^2

13. A decorative garden walkway is designed with stones in the shapes of triangles, rectangles, and trapezoids. A sketch of the design is shown below. What is the total area of the regions marked A, B, and C?

(not drawn to scale)
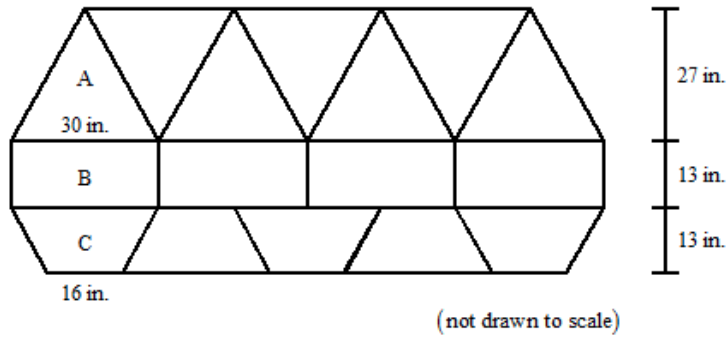
A. 1,393 in^2

B. 1,499 in^2

C. 1,798 in^2

D. 1,094 in^2

14. A parallelogram has an area of 30 m^2. The length of its base is 3 m. What is its height?

A. 3 m

B. 14 m

C. 10 m

D. 5 m

15. An octagonal deck is composed of a rectangle sandwiched between two congruent trapezoids. The deck is shown in the figure below. What is the area of the deck?

(not drawn to scale)
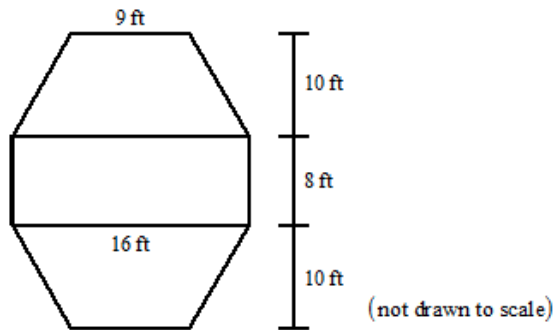
A. 628 ft^2

B. 253 ft^2

C. 360 ft^2

D. 378 ft^2