

TEST NAME: **study guide for 6th grade surface area and volume**
TEST ID: **2323528**
GRADE: **06 - Sixth Grade**
SUBJECT: **Mathematics**
TEST CATEGORY: **School Assessment**

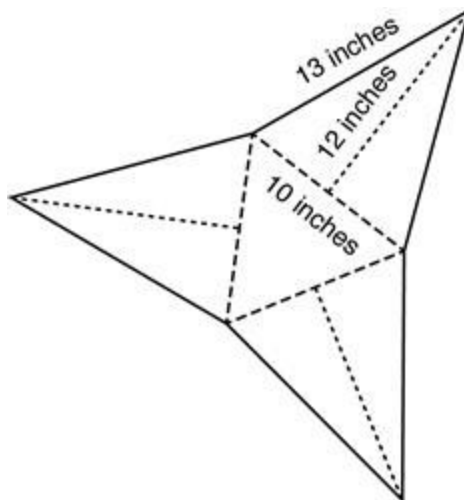
04/09/18, study guide for 6th grade surface area and volume

Student: _____

Class: _____

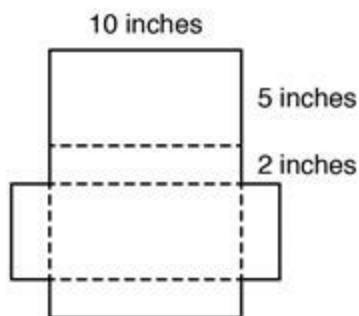
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1. The net of a triangular pyramid is shown. A pyramid will be constructed by this pattern, but it will not have a base.



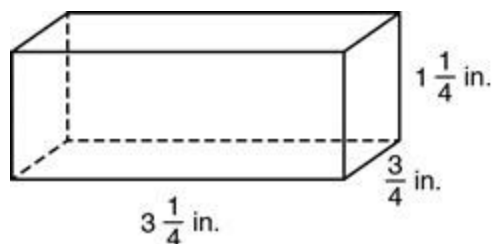
What is the surface area of the faces of the pyramid? Record your answer in square inches.

2. The net of a rectangular prism is shown.



What is the surface area, in square inches, of the figure shown in the net?

3. A small, empty box is shown.



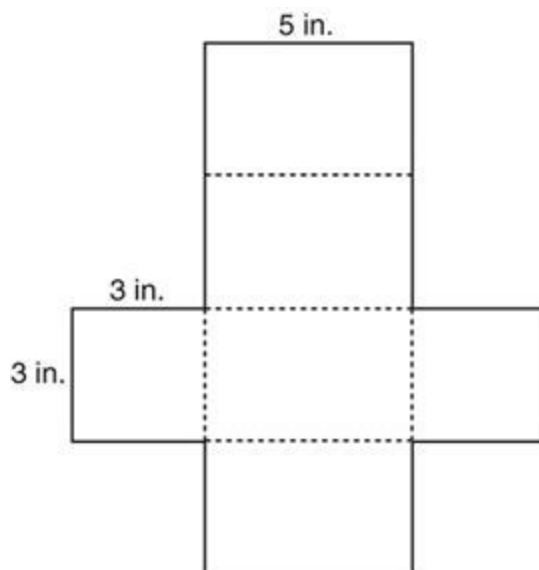
Which statements about this box are true?

Check all that apply.

Pick up to 4 answers.

- A. The volume of the box in cubic inches can be found by multiplying $\frac{15}{16} \times 3\frac{1}{4}$.
- B. The volume of the box is $3\frac{3}{64}$ cubic inches.
- C. It takes 195 cubes with $\frac{1}{4}$ -inch edges to completely fill the box.
- D. The volume of the box can be found by multiplying $3\frac{1}{4}$ inches, $\frac{3}{4}$ inch, $1\frac{1}{4}$ inches.

4. Zoe is making a rectangular box with measurements as shown below.



What is the surface area of the box?

- A. 78 in.^2
B. 60 in.^2
C. 46 in.^2
D. 15 in.^2
5. Which expression can be used to find the volume, in cubic units, of a rectangular prism with the dimensions shown below?

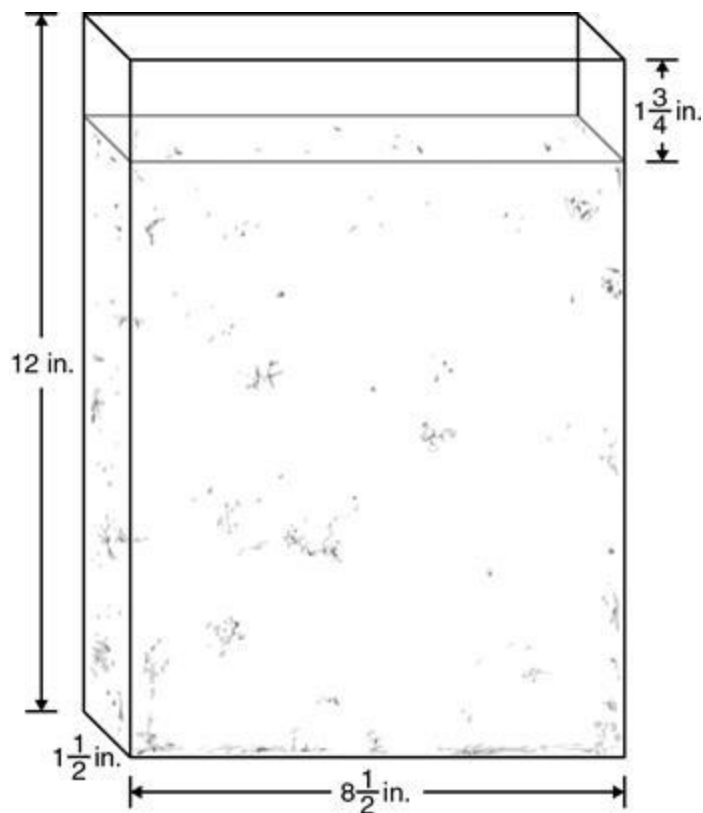
$$\text{length} = 2x \text{ units}$$

$$\text{width} = 4x \text{ units}$$

$$\text{height} = x \text{ units}$$

- A. $7x^3$
B. $7x$
C. $8x^3$
D. $8x$

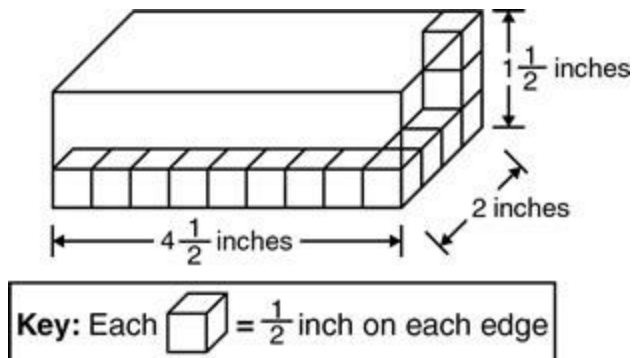
6. A container in the shape of a rectangular prism is used to hold sugar. The height of the container is 12 inches (in.). The current amount of sugar in the container is $1\frac{3}{4}$ inches from the top of the container as shown in the figure below.



What is the volume, in cubic inches, of the total amount of sugar in the container?

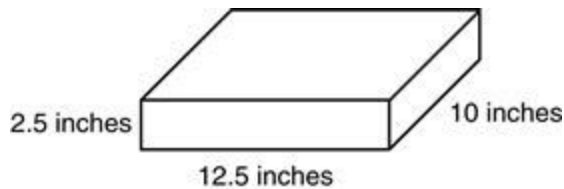
- A. $130\frac{11}{16}$
- B. $137\frac{1}{16}$
- C. $143\frac{7}{16}$
- D. $175\frac{5}{16}$

7. A storage box is shaped like a rectangular prism, as shown below. Skylar stored $\frac{1}{2}$ -inch cubes in the box.



How many cubes are needed to completely fill the box?

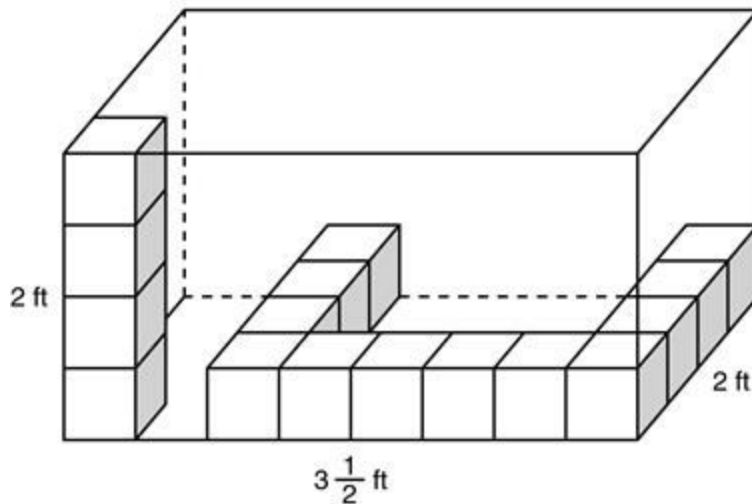
- A. 108 cubes
 - B. 72 cubes
 - C. 54 cubes
 - D. 27 cubes
8. Maria has a gift box shaped like a rectangular prism.



What is the volume of the box?

- A. 156.25 cubic inches
 - B. 181.25 cubic inches
 - C. 312.5 cubic inches
 - D. 362.5 cubic inches
9. Jody has a plastic container in the shape of a rectangular prism. The container is $8\frac{1}{2}$ inches long, 4 inches wide, and $3\frac{1}{2}$ inches high. What is the volume of this plastic container?
- A. 119 cubic inches
 - B. 97 cubic inches
 - C. 34 cubic inches
 - D. 16 cubic inches

10. John has a storage bin in the shape of a rectangular prism. The storage bin measures $3\frac{1}{2}$ feet long, 2 feet wide, and 2 feet tall. John will put boxes that measure $\frac{1}{2}$ foot on each side into the bin.



What is the greatest number of boxes John can put into the bin?

- A. 14
 - B. 56
 - C. 112
 - D. 224
11. Two baking pans are in the shape of rectangular prisms.

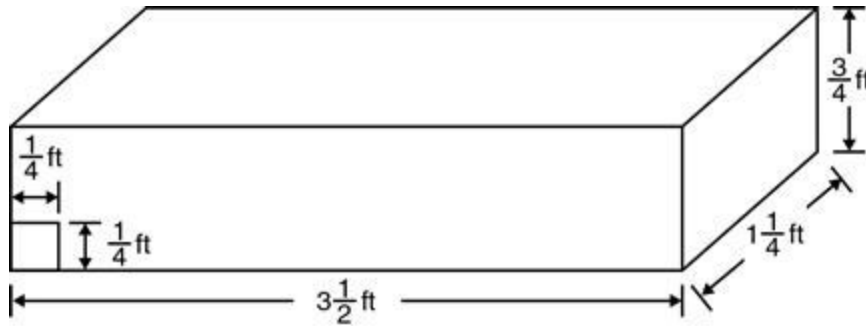
- Pan A is 8 inches by 8 inches by $1\frac{1}{2}$ inches.

- Pan B is 9 inches by 9 inches by $2\frac{3}{4}$ inches.

A batter for brownies will completely fill Pan A. If the same amount of batter is put into Pan B, which measurement would be closest to the number of inches between the top of the batter and the top of Pan B?

- A. $1\frac{1}{4}$
- B. $1\frac{1}{2}$
- C. $2\frac{3}{4}$
- D. $4\frac{1}{4}$

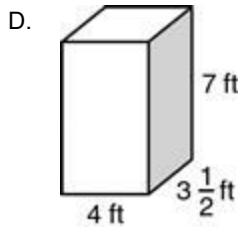
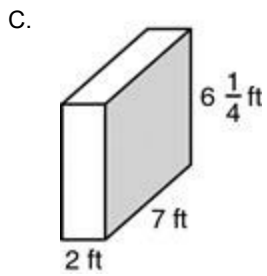
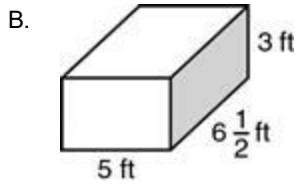
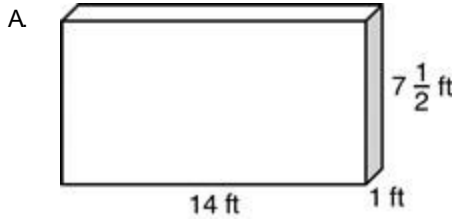
12. Amanda has a storage box in the shape of a rectangular prism. The box is $3\frac{1}{2}$ feet long, $1\frac{1}{4}$ feet wide, and $\frac{3}{4}$ foot tall. She will completely fill the box with cubes that are $\frac{1}{4}$ foot long on each edge, as shown in the figure below.



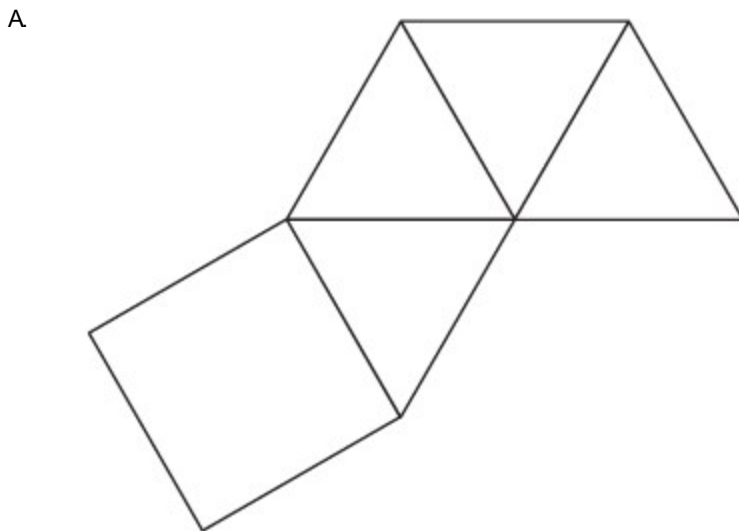
What is the greatest number of cubes Amanda can put into the storage box?

- A. 22
- B. 70
- C. 105
- D. 210

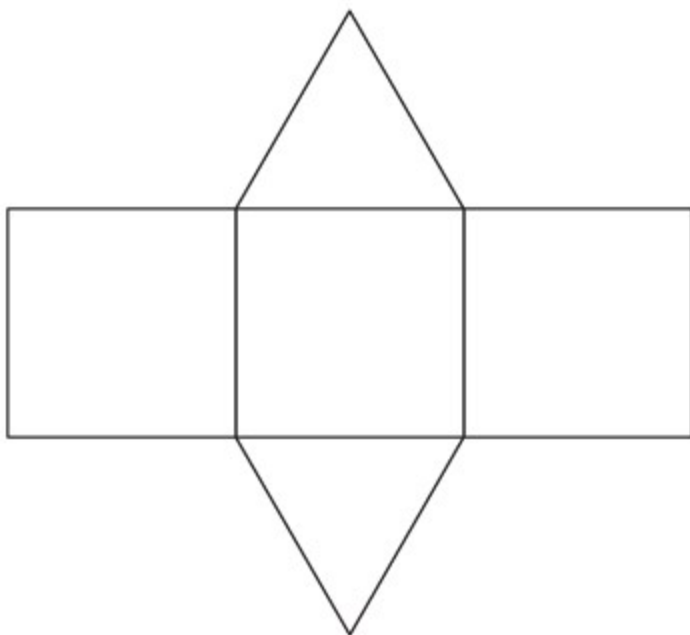
13. A manager at a shipping company will purchase boxes in the shape of right rectangular prisms. He wants the volume of each box to be exactly 98 cubic feet. Which figure shows a box with the dimensions, in feet (ft), that the manager will purchase?



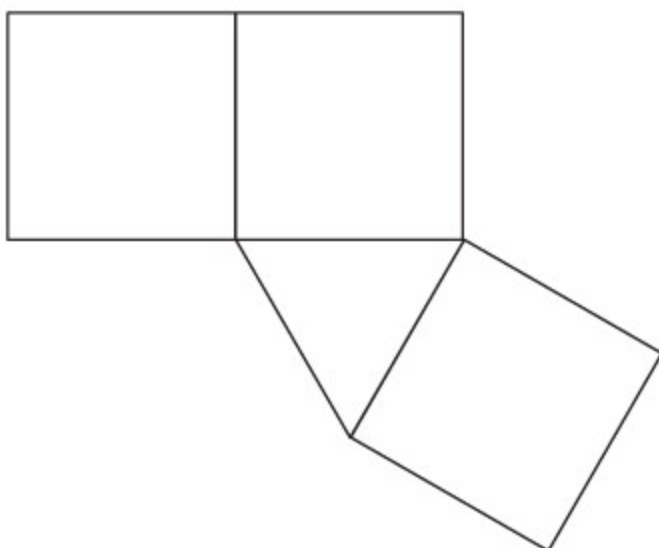
14. Which is the net for a square pyramid?



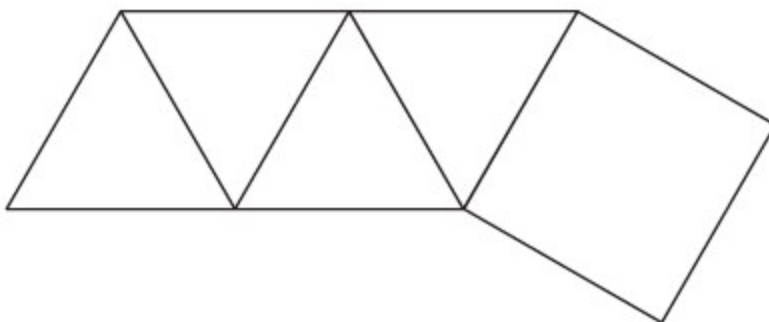
B.



C.



D.



15. Which net represents a three-dimensional figure with a surface area of 864 square centimeters (cm^2)?

