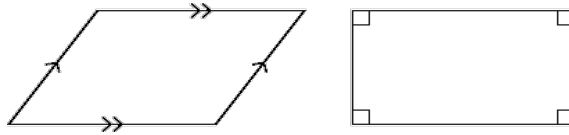


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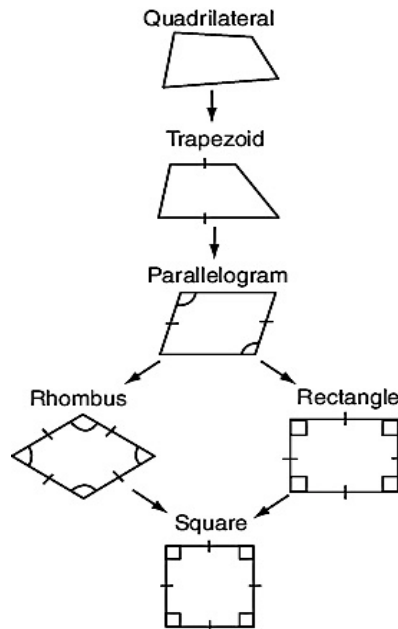
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1. Milo is working on a wall mural using geometric shapes. The mural includes parallelograms and rectangles like the ones below.



Which characteristic is NOT common to both shapes?

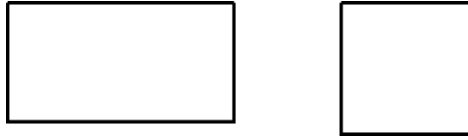
- A. Opposite sides are parallel.
  - B. Opposite sides are congruent.
  - C. Opposite angles are congruent.
  - D. Opposite angles are right angles.
2. The diagram below shows 4-sided shape categories that flow from one to another.



Which shape belongs to all 6 categories for 4-sided shapes?

- A. parallelogram
- B. rhombus
- C. square
- D. trapezoid

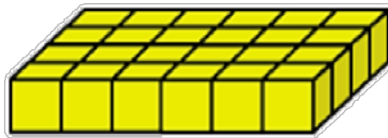
3. Look at the two quadrilaterals shown below.



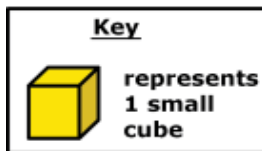
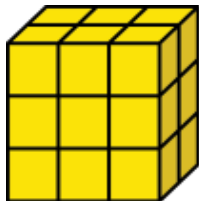
Which one of the following statements about these quadrilaterals is FALSE?

- A. Both quadrilaterals have four equal angles.
  - B. Both quadrilaterals have four equal sides.
  - C. Both quadrilaterals have opposite parallel sides.
  - D. Both quadrilaterals have four right angles.
4. Use the **inclusive** definition of a trapezoid to identify the **TRUE** statement. Select all that apply.
- A. No parallelograms are trapezoids.
  - B. All parallelograms are trapezoids.
  - C. No trapezoids are parallelograms.
  - D. Trapezoids do not have any parallel sides.
  - E. A trapezoid has at least one pair of parallel sides.
5. Which figures can have all of the properties shown below?
- 2 pairs of parallel sides
  - Sides that are perpendicular
  - Opposite sides that are equal
- A. square, pentagon, rectangle
  - B. trapezoid, rectangle, square
  - C. quadrilateral, square, rectangle
  - D. rectangle, hexagon, square

6. Using the **exclusive** definition of a trapezoid, select the **TRUE** statement about trapezoids.
- A. All trapezoids have four sides that are the same length and opposite sides are parallel.
  - B. A trapezoid has only one pair of parallel lines.
  - C. A trapezoid has no parallel sides.
  - D. A trapezoid has four right angles and opposite sides parallel.
7. The base of a rectangular prism is completely filled by 24 unit cubes. Each cube has a length of one unit, a width of one unit, and a height of one unit. If the height of the prism is completely filled by 4 layers of unit cubes, what is the volume of the prism?



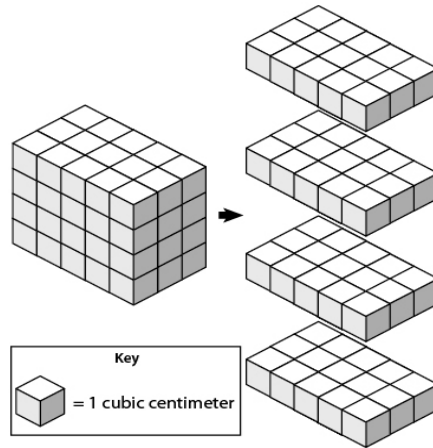
- A. 15 cubic units
  - B. 28 cubic units
  - C. 96 cubic units
  - D. 120 cubic units
- 8.



How many small cubes are needed to make the large figure shown above?

- A. 9
- B. 15
- C. 18
- D. 21

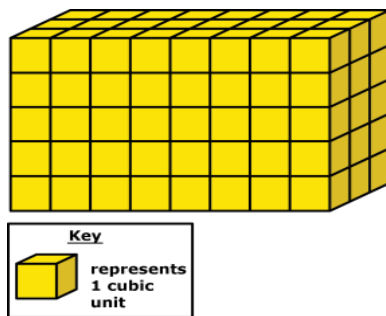
9. The layers of a rectangular prism are shown to the right of the prism.



What is the volume, in cubic centimeters, of the rectangular prism?

- A. 20 cubic centimeters
- B. 48 cubic centimeters
- C. 60 cubic centimeters
- D. 80 cubic centimeters

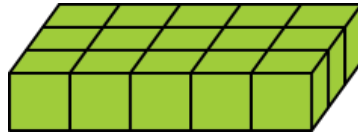
10. Zoey is calculating the volume of this rectangular prism.



Zoey calculates the volume as 16 cubic units because 8 units long + 5 units high + 3 units wide = 16 cubic units. Which of the following describes the mistake Zoey made in her calculation?

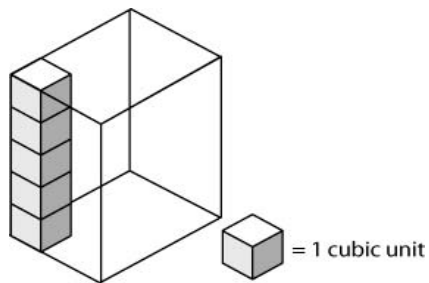
- A. Zoey is wrong because she calculated the volume  $8 + 5 + 3 = 16$  instead of  $8 \times 5 + 3 = 43$ .
- B. Zoey is wrong because she added all the dimensions instead of only adding the length and width.
- C. Zoey is wrong because she calculated the volume  $8 + 5 + 3 = 16$  instead of  $8 + 5 - 3 = 10$ .
- D. Zoey is wrong because she added all of the dimensions instead of multiplying all of the dimensions.

11. What is the volume of this solid figure made with cubes?



- A. 5 cubic units
- B. 15 cubic units
- C. 20 cubic units
- D. 23 cubic units

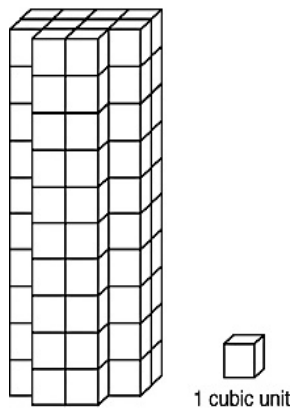
12. The figure below has a volume of 60 cubic units.



How many more cubes will it take to fill the figure?

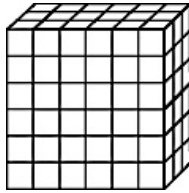
- A. 5 cubic units
- B. 40 cubic units
- C. 55 cubic units
- D. 60 cubic units

13. This figure is made up of unit cubes, each with a volume of 1 cubic unit.  
What is the volume of the figure?



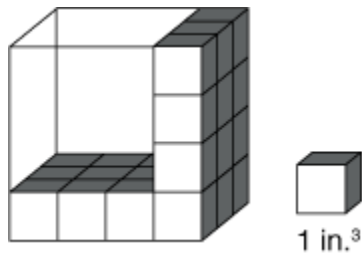
- A. 40 cubic units
- B. 60 cubic units
- C. 70 cubic units
- D. 100 cubic units

14. Andrew created a model using unit cubes. His model is shown. Each unit cube is 1 cubic inch (in.)



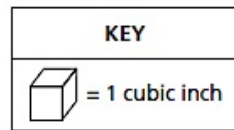
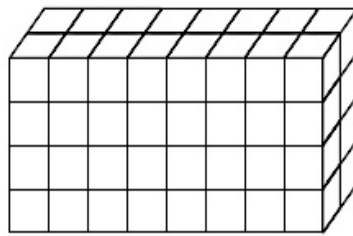
What is the volume, in cubic inches, of Andrew's model?

- A. 18 cubic inches
  - B. 36 cubic inches
  - C. 58 cubic inches
  - D. 108 cubic inches
15. Tracy is filling the box with unit cubes that are 1 inch (in.) on each side. She will fill the box with cubes without any gaps or overlaps. What is the volume of the box?



- A. 11 cubic inches
- B. 21 cubic inches
- C. 36 cubic inches
- D. 48 cubic inches

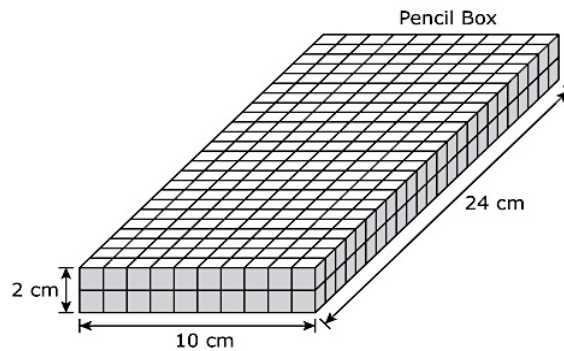
16. Jack used cubes to make the right rectangular prism below.



He then made a smaller right rectangular prism using  $\frac{1}{4}$  of the number of cubes. What was the volume, in cubic inches, of the smaller right rectangular prism?

- A. 8 cubic inches
- B. 13 cubic inches
- C. 16 cubic inches
- D. 64 cubic inches

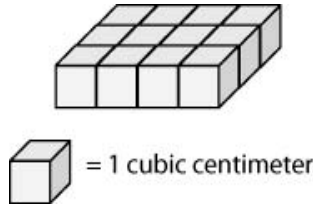
17. A pencil box is in the shape of a right rectangular prism and filled with unit cubes as shown below. Each unit cube has a length of 1 centimeter (cm).



What is the volume of the pencil box?

- A. 20 square centimeters
- B. 36 cubic centimeters
- C. 240 square centimeters
- D. 480 cubic centimeters

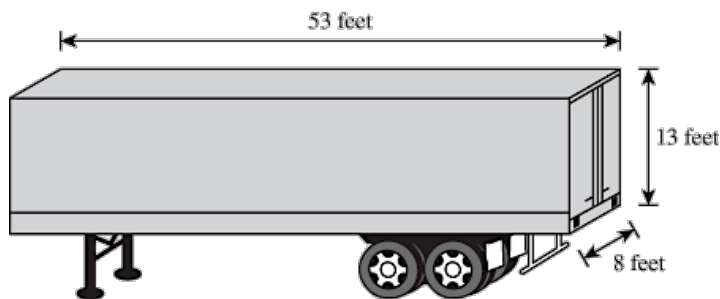
18. Paige started to make a rectangular prism using centimeter cubes, as shown below.



When Paige completes the prism, the volume will be 60 cubic centimeters. What will be the height, in centimeters, of Paige's completed rectangular prism?

- A. 4 cm
- B. 5 cm
- C. 15 cm
- D. 20 cm

19. Which measure represents the volume of the semi-truck trailer shown below?

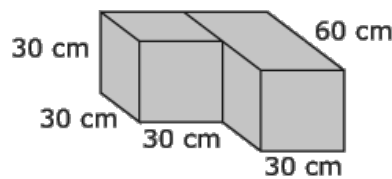


- A. 74 cubic feet
- B. 689 cubic feet
- C. 2,434 cubic feet
- D. 5,512 cubic feet

20. Ms. Taylor has a box on her desk for paper clips with a total volume of 120 cubic cm. The paper clip box has a length of 6 cm and a width of 4 cm. What is the height of the box?

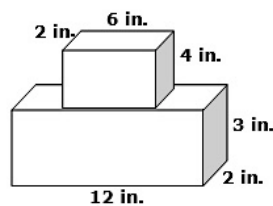
- A. 30 cm
- B. 5 cm
- C. 20 cm
- D. 4 cm

21. Jason helped his dad put plastic and aluminum items into the recycling container. The container is a large cube with a length, width, and height of 6 feet. What is the volume of the recycling container?
- A. 36 cubic feet  
 B. 72 cubic feet  
 C. 216 cubic feet  
 D. 396 cubic feet
22. Megan and Devon are working together in science class to build a terrarium for an herb garden. The plan for the terrarium, with some dimensions in centimeters (cm), is shown here.



What is the volume of the terrarium?

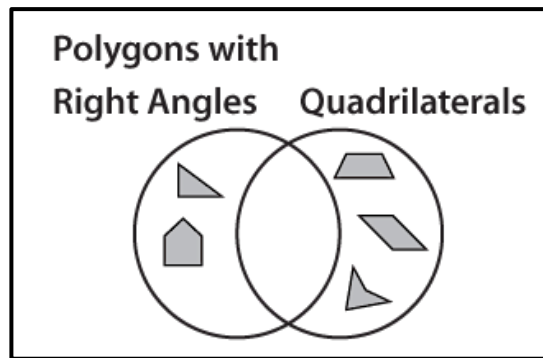
- A. 27,000 cubic centimeters because  $30 \times 30 \times 30 = 27,000$  .  
 B. 54,000 cubic centimeters because  $30 \times 30 \times 60 = 54,000$  .  
 C. 81,000 cubic centimeters because  $30 \times 30 \times 30 + 30 \times 30 \times 60 = 81,000$  .  
 D. 48,600,000 cubic centimeters because  $30 \times 30 \times 30 \times 30 \times 60 = 48,600,000$ .
23. Mike needs to pack school supplies for the summer. He stacks two boxes on the table to start packing.



What is the total volume of the boxes?

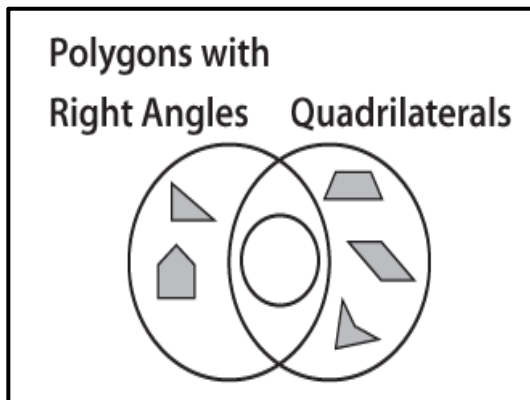
- A. 48 inches<sup>3</sup>  
 B. 72 inches<sup>3</sup>  
 C. 120 inches<sup>3</sup>  
 D. 168 inches<sup>3</sup>

24. Jane used a Venn diagram to sort shapes.

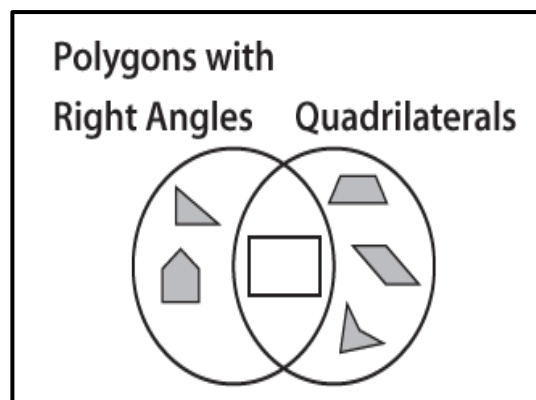


Select a plane shape that belongs inside the overlap region of the diagram.

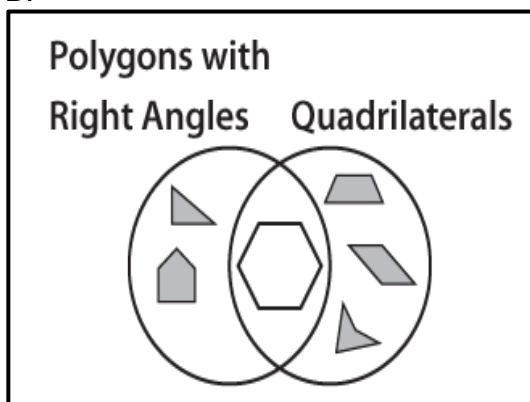
A.



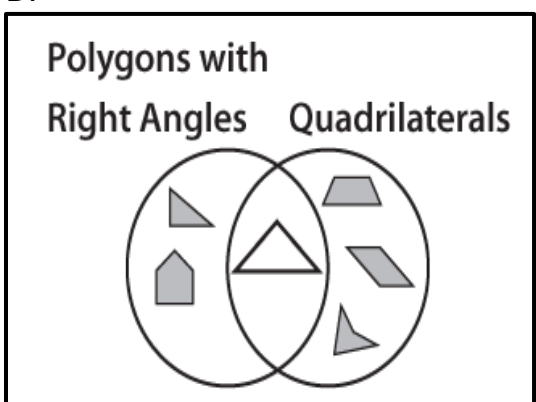
C.



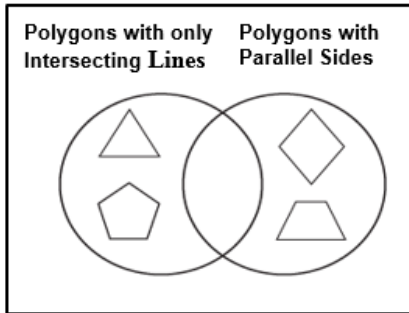
B.



D.

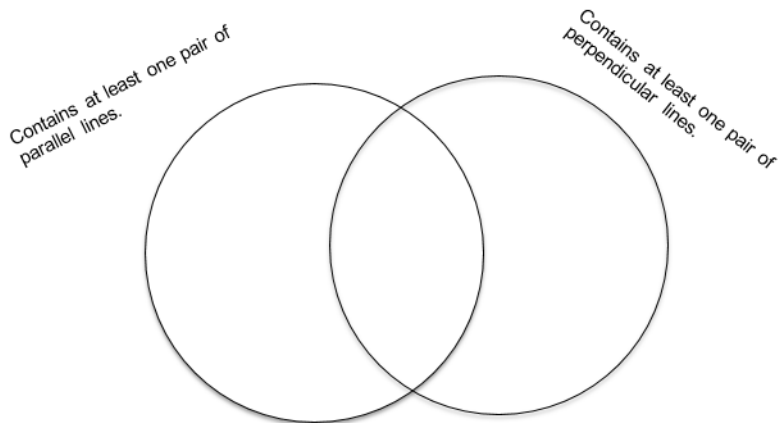


25. The fifth grade art class is making quilts. These are some of the shapes they are putting on their quilt.



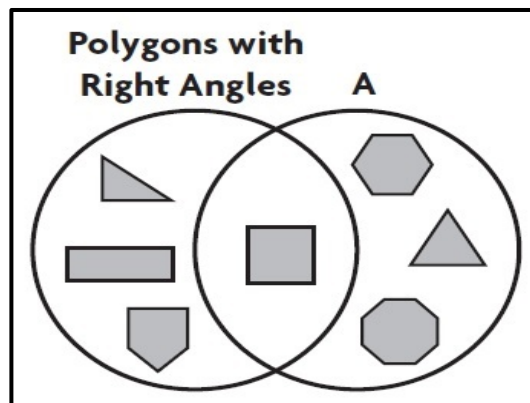
Choose all the shapes that belong in the overlapped section of the Venn diagram.

- A. circle
  - B. rectangle
  - C. scalene triangle
  - D. square
  - E. trapezoid
26. George used a Venn diagram to sort shapes. Which shape belongs in both categories?



- A. Square
- B. Rhombus
- C. Hexagon
- D. Right triangle

27. Lacy used a Venn diagram to sort shapes. What label could she use for circle A?



- A. Regular polygons.
- B. Polygons with less than four sides.
- C. Polygons with perpendicular lines.
- D. Polygons with only acute angles.

