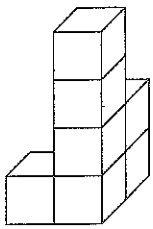
Skill Set 6: Spatial Visualization

Spatial visualization is a thinking skill often used in upper primary mathematical problems. It requires you to visualize an object or a situation and then manipulate alternatives, sometimes using a diagram, to solve a problem.

Example:

Study the figure below. How many cubes are needed to build it?



Think

- Visualize the figure from different sides.
- Count the number of cubes by column from the side that gives you the best view.

Solve

From the top view, you will see  .

This shows that the figure has 3 columns of cubes.

Counting by column, the figure has 1 + 4 + 2 = 7.

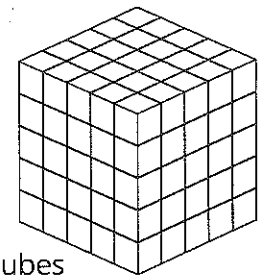
Answer 7 cubes are needed to build the figure.

Give it a try!

How many cubes are needed to build the following figure if it is empty inside and the walls are only 1 cube thick?

Think

Visualize the figure as hollow or empty inside.



Solve

Volume of solid figure = _____ × _____ × _____ = _____ cubes

Volume of hollow figure = _____ × _____ × _____ = _____ cubes

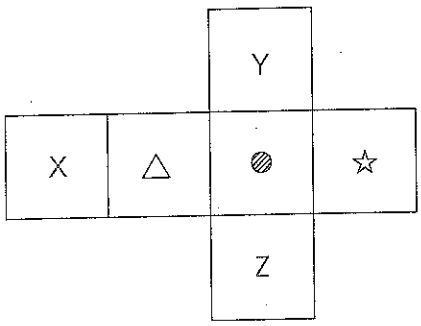
_____ – _____ = _____

Answer _____ **cubes** are needed to build the figure.

(Answer: 98)

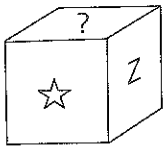
Practice: Spatial Visualization

1. The net of a cube is shown below. What shape or letter is on the top face of the cube?



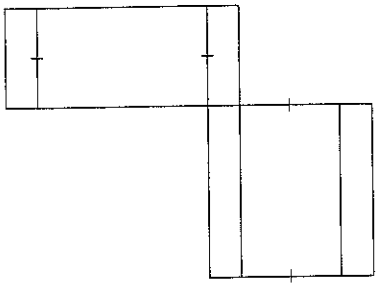
Think

Solve



Answer

2. The net of a solid is shown below. Draw how the solid looks when its net is folded up.



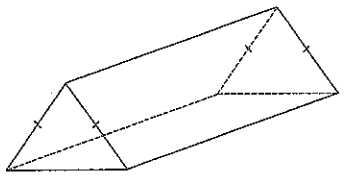
Think

Solve

Answer

Practice: Spatial Visualization

3. The figure below is a prism. Draw the net of the prism.

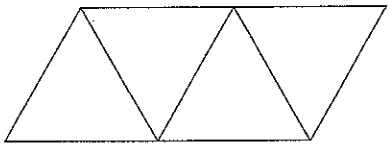


Think

Solve

Answer

4. The net of a solid is shown below. Draw how the solid looks when its net is folded up.



Think

Solve

Answer