

Unfolding Solids: Nets and Surface Area

Grade 6 math · Test · Standards: 6.G.A.4

Name: _____ Date: _____ Class: _____

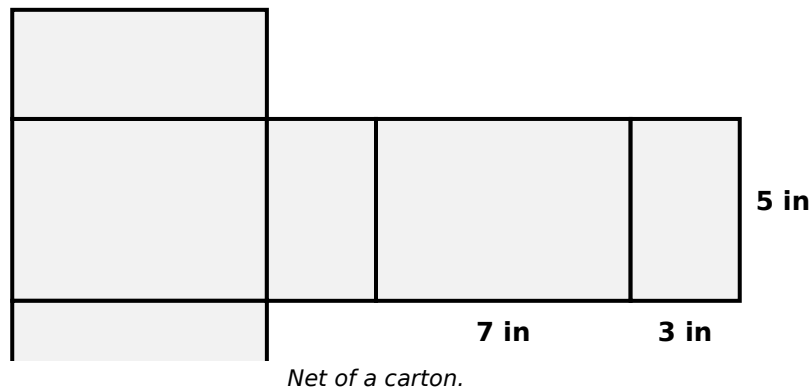
This test checks standard 6.G.A.4. Use nets and formulas to find the surface area of boxes, cubes, triangular prisms and pyramids. Show the area of each face, and write square units. The test is worth 20 points and should take 45 minutes.

Standards: 6.G.A.4 · **Level:** Grade 6

Time: 45 minutes · 8 questions · Total: 20 points · Calculator: as allowed by your teacher

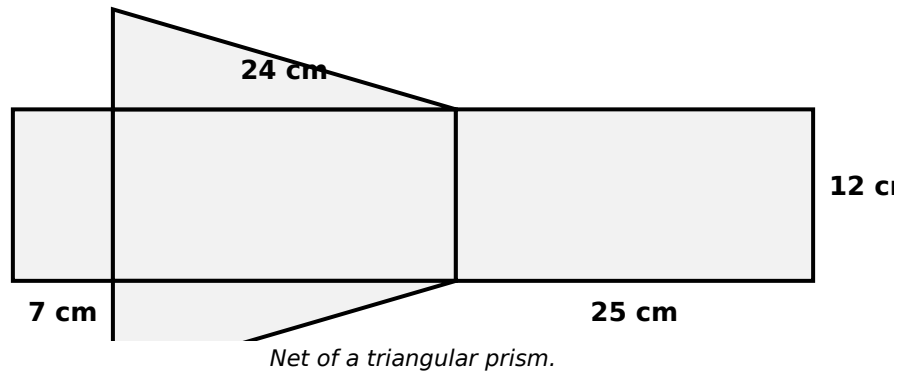
Question 1 Surface area of a carton (2 points)

Use the net to find the surface area of the carton.



Question 2 Triangular prism (3 points)

A wedge-shaped box unfolds into the net below. Calculate the total area of its cardboard.

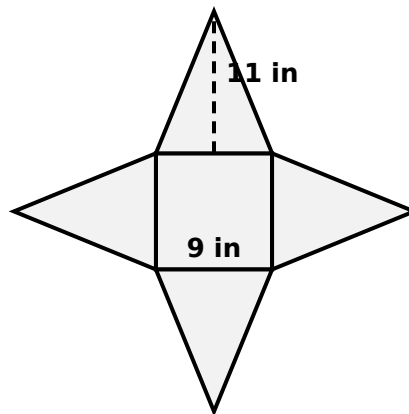


Question 3 Cube (2 points)

A storage cube has 15-centimeter edges. How much material covers all of its faces?

Question 4 Square pyramid (3 points)

Find the surface area of the square pyramid whose net is shown.



Question 5 Pet crate without a lid (3 points)

A pet crate is 30 inches long, 20 inches wide and 18 inches tall. It has no lid.

- Find the area of the bottom. (1 point)
- Find the combined area of the four sides. (1 point)
- Find the total area of plastic in the crate. (1 point)

Question 6 Wrapping a box (3 points)

A box is 12 inches long, 9 inches wide and 5 inches tall. A sheet of wrapping paper has an area of 300 square inches.

- a. Find the surface area of the box. (2 points)
- b. Find the least number of whole sheets needed if paper cannot be pieced together. (1 point)

Question 7 Missing height (2 points)

A box has a length of 11 inches, a width of 3 inches and a surface area of 122 square inches. Find its height.

Question 8 Name the solid (2 points)

A solid has 1 square face and 4 triangular faces.

- a. Name the solid. (1 point)
- b. Find its number of edges. (1 point)