

Net Area Mission

Unfold faces, find areas, add them.

GRADE 6 • MA.6.GR.2.4

MA.6.GR.2.4 "Given a mathematical or real-world context, find the surface area of right rectangular prisms and right rectangular pyramids using the figure's net."

NAME _____

DATE _____

ADD EVERY FACE

A net unfolds every outside face of a solid. Find the area of each rectangle or triangle in the net, then add the areas once. A rectangular prism has three matching face pairs, while a rectangular pyramid has one rectangular base and four triangles.

WORKED EXAMPLE

A rectangular prism net has face dimensions 3 by 5, 3 by 8, and 5 by 8. Find the surface area.

1. Face pairs are 3×5 , 3×8 , and 5×8 .
2. Find both faces in each pair: $2(15) = 30$, $2(24) = 48$, and $2(40) = 80$.
3. Add: $30 + 48 + 80 = 158$.

Answer: 158 square units

PRACTICE 5 problems

- 1** A rectangular prism net has two 6 by 9 rectangles, two 6 by 4 rectangles, and two 9 by 4 rectangles. Find the surface area.

ANSWER _____

- 2** A rectangular prism net has dimensions 1 by 7 by 6. Find the surface area.

ANSWER _____

- 3** A right rectangular pyramid net has a 6 by 10 base. Two triangles have base 6 and height 9. Two triangles have base 10 and height 7. Find the surface area.

ANSWER _____

- 4** A right rectangular pyramid net has a 4 by 11 base. Two triangles have base 4 and height 6. Two triangles have base 11 and height 7. Find the surface area.

ANSWER _____

- 5** A square pyramid net has a 7 by 7 base and four triangles with base 7 and height 6. Find the surface area.

ANSWER _____

APPLY IT Show your work

- 1** A game club covers every outside face of a rectangular prize box with paper. The box net has dimensions 12 cm by 7 cm by 6 cm. How much paper is needed?

WORK SPACE

ANSWER _____

- 2** A museum display has a right rectangular pyramid roof. Its net has a 10 m by 12 m base, two triangles with base 10 m and height 7 m, and two triangles with base 12 m and height 9 m. What is the roof's surface area?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A right rectangular pyramid net has a 9 by 13 base. Two triangles have base 9 and height 10. Two triangles have base 13 and height 6. Mina adds $117 + 45 + 39$. What did she miss? Explain and find the surface area.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A rectangular prism net has two 6 by 9 rectangles, two 6 by 4 rectangles, and two 9 by 4 rectangles. Find the surface area.	228 square units
2	A rectangular prism net has dimensions 1 by 7 by 6. Find the surface area.	110 square units
3	A right rectangular pyramid net has a 6 by 10 base. Two triangles have base 6 and height 9. Two triangles have base 10 and height 7. Find the surface area.	184 square units
4	A right rectangular pyramid net has a 4 by 11 base. Two triangles have base 4 and height 6. Two triangles have base 11 and height 7. Find the surface area.	145 square units
5	A square pyramid net has a 7 by 7 base and four triangles with base 7 and height 6. Find the surface area.	133 square units

PART 2 • APPLY IT

- 396 square centimeters** Find the areas of the three face pairs: $2(12 \times 7) + 2(12 \times 6) + 2(7 \times 6)$. The total is 396 square centimeters.
- 298 square meters** Add the base area, 120, to the four triangle areas, 70 and 108. The total is 298 square meters.

CHALLENGE

Mina missed a second triangle of each type. The surface area is $117 + 2(45) + 2(39) = 285$ square units.

Accept equivalent addition expressions and correct square units. For the challenge, accept an explanation that identifies the missing matching triangles.