

Net Area Detective

Add the faces in a solid's net.

GRADE 7 • TEKS 7.9.D

7.9.D "solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net."

NAME _____

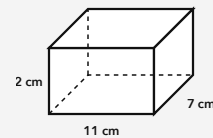
DATE _____

ADD THE NET FACES

A net opens a solid into its flat faces. For lateral surface area, add every face except the base or bases. For total surface area, add every face, including the base or bases.

WORKED EXAMPLE

Find the total surface area of the rectangular prism shown.

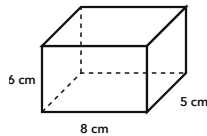


1. Two faces are 11 cm by 7 cm: $2(77) = 154$.
 2. Two faces are 11 cm by 2 cm: $2(22) = 44$.
 3. Two faces are 7 cm by 2 cm: $2(14) = 28$.
- Add: $154 + 44 + 28 = 226$.

Answer: 226 cm²

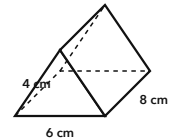
PRACTICE 4 problems

- 1** Find the lateral surface area of the rectangular prism shown.



ANSWER _____

- 2** Find the total surface area of the triangular prism shown. Its triangular base has two equal sides.



ANSWER _____

- 3** A rectangular pyramid net has a 9 cm by 4 cm base. The two triangles on the 9 cm edges have height 6 cm. The two triangles on the 4 cm edges have height 5 cm. Find its total surface area.

ANSWER _____

- 4** A triangular pyramid net has 4 congruent triangles. Each triangle has a base of 12 cm and a height of 5 cm. Find the total surface area.

ANSWER _____

APPLY IT Show your work

- 1** A student covers every face of a rectangular-prism game box with design paper. The box is 13 cm long, 8 cm wide, and 4 cm high. How much paper is needed?

WORK SPACE

ANSWER _____

- 2** A music club wraps only the three side faces of a triangular-prism display. Each triangular end has side lengths 8 cm, 8 cm, and 10 cm. The display is 9 cm long. How much wrap is needed?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A rectangular pyramid has a 12 cm by 8 cm base. The two triangles on the 12 cm sides have height 5 cm. The two triangles on the 8 cm sides have height 9 cm. Find the total surface area. Explain why the base is added only once.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the lateral surface area of the rectangular prism shown.	156 cm²
2	Find the total surface area of the triangular prism shown. Its triangular base has two equal sides.	152 cm²
3	A rectangular pyramid net has a 9 cm by 4 cm base. The two triangles on the 9 cm edges have height 6 cm. The two triangles on the 4 cm edges have height 5 cm. Find its total surface area.	110 cm²
4	A triangular pyramid net has 4 congruent triangles. Each triangle has a base of 12 cm and a height of 5 cm. Find the total surface area.	120 cm²

PART 2 • APPLY IT

1. **376 cm²** Add the areas of all six faces: $2(13 \times 8 + 13 \times 4 + 8 \times 4) = 376$.
2. **234 cm²** The triangular base perimeter is 26 cm. Multiply 26 by the prism length, 9 cm, for 234 cm².

CHALLENGE

228 cm². The net has one rectangular base and four triangular lateral faces, so the base area is counted once.

Accept equivalent addition expressions and correct area units. For lateral area, do not include the base or bases.