LESSON MAKER PRO

Triangle Area Builders

Use rectangles to find the area of right triangles.

GRADE 6 · MA.6.GR.2.1

MA.6.GR.2.1 "Derive a formula for the area of a right triangle using a rectangle. Apply a formula to find the area of a triangle."

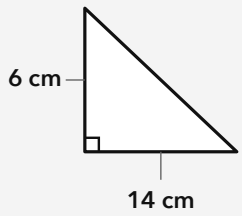
NAME _____ DATE _____

BUILD A RECTANGLE

Two matching right triangles can fit together to make a rectangle. A triangle is half of that rectangle, so its area is A = (b * h) / 2, where b is the base and h is the perpendicular height.

WORKED EXAMPLE

Find the area of the right triangle shown.

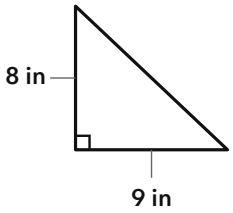


1. Make a rectangle with base 14 cm and height 6 cm.
2. Rectangle area = 14 * 6 = 84 cm^2.
3. The triangle is half the rectangle: 84 / 2 = 42 cm^2.

Answer: 42 cm^2

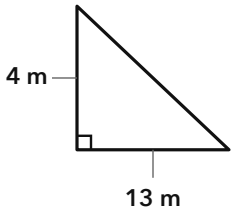
PRACTICE 6 problems

1 Find the area of the right triangle shown.



ANSWER _____

2 Find the area of the right triangle shown.



ANSWER _____

3 A triangular garden has a base of 15 ft and a perpendicular height of 7 ft. What is its area?

ANSWER _____

4 A triangle has a base of 18 cm and a perpendicular height of 11 cm. Find its area.

ANSWER _____

5 A triangle has an area of 42 in^2 and a base of 12 in. What is its perpendicular height?

ANSWER _____

6 A triangle has a base of 10 1/2 cm and a perpendicular height of 4 cm. Find its area.

ANSWER _____

APPLY IT Show your work

1 A skate park is making a right-triangle side panel for a ramp. The panel has a base of 24 ft and a perpendicular height of 9 ft. How much material is needed to cover one side panel?

WORK SPACE

ANSWER _____

2 A gaming club is making a triangular banner with a base of 20 in and a perpendicular height of 13 in. What is the area of the banner?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A right triangle has an area of 48 cm^2. Its base is 4 cm longer than its perpendicular height. Find the base and height. Explain how you know.

WORK SPACE AND ANSWER

ANSWER KEY

Triangle Area Builders

GRADE 6 · MA.6.GR.2.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of the right triangle shown.	**36 in^2**
2	Find the area of the right triangle shown.	**26 m^2**
3	A triangular garden has a base of 15 ft and a perpendicular height of 7 ft. What is its area?	**52 1/2 ft^2**
4	A triangle has a base of 18 cm and a perpendicular height of 11 cm. Find its area.	**99 cm^2**
5	A triangle has an area of 42 in^2 and a base of 12 in. What is its perpendicular height?	**7 in**
6	A triangle has a base of 10 1/2 cm and a perpendicular height of 4 cm. Find its area.	**21 cm^2**

PART 2 · APPLY IT

1. **108 ft^2** Use A = (b * h) / 2. Compute (24 * 9) / 2 = 108.
2. **130 in^2** Use A = (b * h) / 2. Compute (20 * 13) / 2 = 130.

CHALLENGE

Height = 8 cm and base = 12 cm. The dimensions must multiply to 96 because 2 * 48 = 96, and 8 and 12 differ by 4.

Accept equivalent fractional or decimal forms, such as 52.5 ft^2 for 52 1/2 ft^2. Require square units for area answers and linear units for the height answer.