

Triangle Area Lab

Find the area of right triangles with a simple formula.

GRADE 5 • 5.MG.2.a

5.MG.2.a "Investigate and develop a formula for determining the area of a right triangle."

NAME _____

DATE _____

HALF A RECTANGLE

The base and height are the two sides that meet at the right angle. A right triangle is half of a rectangle with the same base and height, so $\text{Area} = (\text{base times height}) / 2$. Multiply the base and height, then divide by 2.

WORKED EXAMPLE

Find the area of a right triangle with a base of 14 units and a height of 9 units.

1. Multiply the base and height.
2. $14 \text{ times } 9 = 126$.
3. Divide the product by 2.
4. $126 / 2 = 63$.

Answer: 63 square units

PRACTICE 6 problems

- 1** Find the area of a right triangle with a base of 8 units and a height of 5 units.

ANSWER _____

- 2** Find the area of a right triangle with a base of 12 centimeters and a height of 7 centimeters.

ANSWER _____

- 3** Find the area of a right triangle with a base of 15 meters and a height of 4 meters.

ANSWER _____

- 4** A right triangle has an area of 35 square units and a base of 10 units. What is its height?

ANSWER _____

- 5** The two sides that meet at the right angle measure 11 inches and 6 inches. Find the area of the right triangle.

ANSWER _____

- 6** Find the area of a right triangle with a base of 16 centimeters and a height of 3 centimeters.

ANSWER _____

APPLY IT Show your work

- 1** Maya is making a right-triangle pennant for her backpack. Its base is 18 inches, and its perpendicular height is 10 inches. How much fabric does she need for the pennant?

WORK SPACE

ANSWER _____

- 2** Jordan is decorating a right-triangle panel on a gaming desk. The panel has a base of 13 centimeters and a perpendicular height of 8 centimeters. What is the area of the panel?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A 20-centimeter by 12-centimeter rectangular game board is cut along a diagonal, making two equal right triangles. What is the area of one triangle? Explain why.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the area of a right triangle with a base of 8 units and a height of 5 units.	20 square units
2	Find the area of a right triangle with a base of 12 centimeters and a height of 7 centimeters.	42 square centimeters
3	Find the area of a right triangle with a base of 15 meters and a height of 4 meters.	30 square meters
4	A right triangle has an area of 35 square units and a base of 10 units. What is its height?	7 units
5	The two sides that meet at the right angle measure 11 inches and 6 inches. Find the area of the right triangle.	33 square inches
6	Find the area of a right triangle with a base of 16 centimeters and a height of 3 centimeters.	24 square centimeters

PART 2 • APPLY IT

1. **90 square inches** Multiply 18 by 10 to get 180. Divide 180 by 2 to get 90 square inches.
2. **52 square centimeters** Multiply 13 by 8 to get 104. Divide 104 by 2 to get 52 square centimeters.

CHALLENGE

120 square centimeters. The rectangle has an area of 240 square centimeters, and the diagonal splits it into two equal triangles, so each triangle has half the area.

Accept equivalent unit labels, such as sq. cm or cm². For the challenge, accept any correct explanation that the diagonal divides the rectangle into two equal halves.