LESSON MAKER PRO

Triangle Area Detectives

Use the two legs to find the area of a right triangle.

GRADE 5 · 5.MG.2.a

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

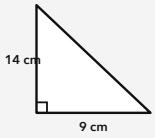
NAME _____ DATE _____

HALF A RECTANGLE

A right triangle is half of a rectangle with the same two leg lengths. Multiply the lengths of the two legs, then divide by 2 to find the area. Write area in square units.

WORKED EXAMPLE

Find the area of the right triangle shown.

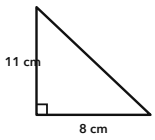


1. The two sides that meet at the square corner are the legs.
2. 9 × 14 = 126.
3. 126 / 2 = 63.

Answer: 63 cm²

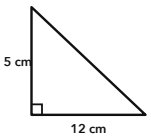
PRACTICE 6 problems

1 Find the area of the right triangle shown.



ANSWER _____

2 Find the area of the right triangle shown.



ANSWER _____

3 A right triangle has legs that are 6 cm and 7 cm long. What is its area?

ANSWER _____

4 A right triangle has an area of 36 cm². One leg is 4 cm long. How long is the other leg?

ANSWER _____

5 A right triangle has a base of 16 cm and a perpendicular height of 3 cm. What is its area?

ANSWER _____

6 A right triangle has an area of 40 cm². One leg is 10 cm long. Find the length of the other leg.

ANSWER _____

APPLY IT Show your work

1 A team is making a right-triangle flag for a game. The two legs of the flag are 15 inches and 4 inches. How many square inches of fabric does the flag cover?

WORK SPACE

ANSWER _____

2 A skateboard ramp design has a right-triangle side section with an area of 48 ft^2. Its base is 12 ft. What is the perpendicular height of the section?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A 16 cm by 10 cm rectangle is cut from one corner to the opposite corner, making two right triangles. Explain why the area of each triangle is 80 cm^2.

WORK SPACE AND ANSWER

ANSWER KEY

Triangle Area Detectives

GRADE 5 · 5.MG.2.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of the right triangle shown.	**44 cm^2**
2	Find the area of the right triangle shown.	**30 cm^2**
3	A right triangle has legs that are 6 cm and 7 cm long. What is its area?	**21 cm^2**
4	A right triangle has an area of 36 cm^2. One leg is 4 cm long. How long is the other leg?	**18 cm**
5	A right triangle has a base of 16 cm and a perpendicular height of 3 cm. What is its area?	**24 cm^2**
6	A right triangle has an area of 40 cm^2. One leg is 10 cm long. Find the length of the other leg.	**8 cm**

PART 2 · APPLY IT

1. **30 in^2** Multiply the leg lengths: 15 × 4 = 60. Divide by 2, so the flag covers 30 square inches.
2. **8 ft** The two leg lengths must multiply to 96 because 48 × 2 = 96. Since 12 × 8 = 96, the height is 8 feet.

CHALLENGE

The rectangle has an area of 16 × 10 = 160 cm^2. The diagonal makes two equal right triangles, so each triangle has half of 160 cm^2, or 80 cm^2.

Accept equivalent multiplication and division work, such as dividing one leg length by 2 before multiplying. For the challenge, students should state that the diagonal makes two equal triangles and that each triangle is half the rectangle's area.