

Triangle Area Lab

Estimate and find the area of right triangles.

GRADE 5 • 5.MG.2.b

5.MG.2.b "Estimate and determine the area of a right triangle, with diagrams, when the base and the height are given in whole number units, in metric or U.S. Customary units, and record the solution with the appropriate unit of measure (e.g...."

NAME _____

DATE _____

HALF A RECTANGLE

A right triangle is half of a rectangle with the same base and height. Find its area by multiplying the base by the height, then dividing by 2. Write the answer in square units, such as square inches or square meters.

WORKED EXAMPLE

Find the area of this right triangle.

/ | / | / | 9 cm / ____ | 14 cm

1. Multiply the base and height: $14 \times 9 = 126$.
2. Divide by 2: $126 \div 2 = 63$.
3. Write the area in square units.

Answer: 63 square centimeters

PRACTICE 6 problems

- 1** Estimate the area, then find the exact area.
/ | / | / | 5 in / ____ | 8 in

ANSWER _____

- 2** Estimate the area, then find the exact area.
/ | / | / | 7 ft / ____ | 16 ft

ANSWER _____

- 3** Estimate the area, then find the exact area.
/ | / | / | 31 ft / ____ | 19 ft

ANSWER _____

- 4** Estimate the area, then find the exact area.
/ | / | / | 15 m / ____ | 24 m

ANSWER _____

- 5** Find the exact area. / | / | / | 12 yd / ____ | 11 yd

ANSWER _____

- 6** Find the exact area. / | / | / | 18 in / ____ | 30 in

ANSWER _____

APPLY IT Show your work

- 1** A student makes a right-triangle sign for a book display. The sign has a base of 25 centimeters and a perpendicular height of 16 centimeters. What is the area of the sign?

WORK SPACE

ANSWER _____

- 2** Maya makes a right-triangle flag for her bike. The flag has a base of 27 inches and a perpendicular height of 10 inches. What is the area of the flag?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A game club is choosing between two right-triangle floor decals. Decal A has a base of 28 inches and a height of 15 inches. Decal B has a base of 21 inches and a height of 20 inches. Which decal has the greater area, or do they have equal areas? Show calculations and explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Estimate the area, then find the exact area. $/ / / /$ 5 in $/ ___$ 8 in	Estimate: about 20 square inches. Exact area: 20 square inches.
2	Estimate the area, then find the exact area. $/ / / /$ 7 ft $/ ___$ 16 ft	Estimate: about 60 square feet. Exact area: 56 square feet.
3	Estimate the area, then find the exact area. $/ / / /$ 31 ft $/ ___$ 19 ft	Estimate: about 300 square feet. Exact area: 294.5 square feet.
4	Estimate the area, then find the exact area. $/ / / /$ 15 m $/ ___$ 24 m	Estimate: about 200 square meters. Exact area: 180 square meters.
5	Find the exact area. $/ / / /$ 12 yd $/ ___$ 11 yd	66 square yards
6	Find the exact area. $/ / / /$ 18 in $/ ___$ 30 in	270 square inches

PART 2 • APPLY IT

- 200 square centimeters** Multiply 25 by 16 to get 400. Divide 400 by 2 to get 200 square centimeters.
- 135 square inches** Multiply 27 by 10 to get 270. Divide 270 by 2 to get 135 square inches.

CHALLENGE

The decals have equal areas. Decal A: $28 \times 15 \div 2 = 210$ square inches. Decal B: $21 \times 20 \div 2 = 210$ square inches.

Accept 294.5 square feet or 294 $\frac{1}{2}$ square feet. For estimates, accept reasonable nearby values when the student shows or explains an estimation method.