

Right Triangle Detectives

Find the hypotenuse and legs in any direction.

GRADE 8 • 8.MG.4.c

8.MG.4.c "Identify the parts of a right triangle (the hypotenuse and the legs) given figures in various orientations."

NAME _____

DATE _____

SPOT THE SPECIAL SIDE

In a right triangle, the hypotenuse is the side opposite the right angle. The other two sides touch the right angle and are called legs. The hypotenuse is always the longest side.

WORKED EXAMPLE

Triangle PQR has a right angle at Q.
 $PQ = 8$, $QR = 15$, and $PR = 17$.
Name the hypotenuse and the legs.

1. Locate the right angle at Q.
2. The side across from Q is PR.
3. PR is the hypotenuse, so PQ and QR are the legs.

Answer: Hypotenuse: PR. Legs: PQ and QR.

PRACTICE 6 problems

- 1** Triangle ABC has a right-angle mark at A.
Which side is the hypotenuse?

ANSWER _____

- 2** Triangle DEF has a right-angle mark at F.
Name the two legs.

ANSWER _____

- 3** Triangle GHI is drawn with G at the bottom, H at the upper left, and I at the upper right.
The right-angle mark is at I. Name the hypotenuse.

ANSWER _____

- 4** Triangle JKL has a right-angle mark at J. Ella says KL is a leg. Is Ella correct?

ANSWER _____

- 5** Triangle MNO has a right-angle mark at N.
Complete the statement: Hypotenuse: ____.
Legs: ____ and ____.

ANSWER _____

- 6** A right triangle has sides UV, VW, and WU.
The right angle is formed by UV and VW.
Name the hypotenuse.

ANSWER _____

APPLY IT Show your work

1

For a game design poster, Kai draws right triangle RST. R is at the lower left, S is at the lower right, and T is above S. The right-angle mark is at S. The diagonal RT gets a bright border. Is RT a hypotenuse or a leg? Name the other two sides.

WORK SPACE

ANSWER _____

2

A student builds a phone stand with a triangular side frame labeled WXY. The right-angle mark is at X, where the base and the upright piece meet. A support bar runs from W to Y. Name the support bar's role and name the legs.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A triangular sail logo is rotated so that side AB looks almost vertical. The right-angle mark is at C. Devon says AB is a leg because it does not look horizontal. Is Devon correct? Explain your reasoning and name both legs.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Triangle ABC has a right-angle mark at A. Which side is the hypotenuse?	BC
2	Triangle DEF has a right-angle mark at F. Name the two legs.	DF and EF
3	Triangle GHI is drawn with G at the bottom, H at the upper left, and I at the upper right. The right-angle mark is at I. Name the hypotenuse.	GH
4	Triangle JKL has a right-angle mark at J. Ella says KL is a leg. Is Ella correct?	No. KL is the hypotenuse.
5	Triangle MNO has a right-angle mark at N. Complete the statement: Hypotenuse: _____. Legs: _____ and _____.	Hypotenuse: MO. Legs: MN and NO.
6	A right triangle has sides UV, VW, and WU. The right angle is formed by UV and VW. Name the hypotenuse.	WU

PART 2 • APPLY IT

- RT is the hypotenuse. RS and ST are the legs.** The right angle is at S, so the sides that touch S, RS and ST, are legs. RT is opposite the right angle, so it is the hypotenuse.
- WY is the hypotenuse. WX and XY are the legs.** WX and XY meet at the right angle, so they are the legs. WY is across from the right angle, so it is the hypotenuse.

CHALLENGE

Devon is not correct. AB is the hypotenuse because it is opposite the right angle at C. AC and BC are the legs because they touch the right angle.

Accept the two legs in either order. For explanations, accept any accurate statement that the hypotenuse is opposite the right angle and the legs meet at the right angle.