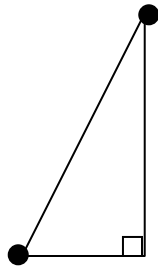


PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** January 22 to January 25**DAY:** Wednesday

RISD Objective: Provided the lengths of the legs of a right triangle (including word problems), students will use the Pythagorean Theorem to find the length of the hypotenuse, applying it as necessary.

PROBLEM #88

A 12 foot pole is upright. A stake is placed 9 feet from the base of the pole. How much rope is needed to brace the pole? Round your answer to the nearest tenth if necessary.



MODEL SOLUTION #88

We will use the Pythagorean theorem to find the missing side.

$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

$$9^2 + 12^2 = h^2 \quad \text{Replace values}$$

$$81 + 144 = h^2 \quad \text{Square the numbers}$$

$$225 = h^2 \quad \text{Add}$$

$$15 = h \quad \text{square root both sides}$$

You need 15 feet of rope to brace the pole.