# Lesson 4.7 Practice: Right Triangles: HL and Proofs with Two Pairs of Triangles

School Launch · Geometry · Unit 4: Triangles and Congruence · Worksheet A

Calculator allowed

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

**1.** Right triangles $ABC$ and $DEF$ have hypotenuses of $5$ and one leg of $3$ each. Are they congruent? Find the other leg. EASY

**2.** Right triangles $ABC$ and $DEF$ have hypotenuses of $25$ and one leg of $7$ each. Are they congruent? Find the other leg. EASY

**3.** Right triangles $ABC$ and $DEF$ have hypotenuses of $17$ and one leg of $8$ each. Are they congruent? Find the other leg. EASY

**4.** Right triangles $ABC$ and $DEF$ have hypotenuses of $10$ and one leg of $6$ each. Are they congruent? Find the other leg. MEDIUM

**5.** Right triangles $ABC$ and $DEF$ have hypotenuses of $15$ and one leg of $9$ each. Are they congruent? Find the other leg. MEDIUM

**6.** Right triangles $ABC$ and $DEF$ have hypotenuses of $13$ and one leg of $5$ each. Are they congruent? Find the other leg. MEDIUM

**7.** Which congruence criterion (SSS, SAS, ASA, AAS, HL) applies, if any? (1) three pairs of angles congruent (AAA); (2) two angles and a non-included side congruent; (3) three pairs of sides congruent. MEDIUM

**8.** In isosceles $\triangle PQR$, the legs measure $5x + 2$ and $2x + 17$, and the perimeter is $71$. Find $x$, the legs and the base. HARD

**9.** The angles of a triangle measure $(4x + 9)^\circ$, $(3x + 0)^\circ$ and $(4x + 94)^\circ$. Find $x$ and the largest angle. HARD

**10.** $\triangle ABC \cong \triangle DEF$. $AB = 5x - 1$ and $DE = 4x + 9$. Find $x$ and $AB$. HARD