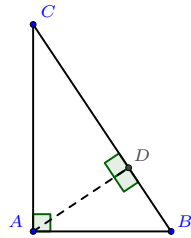


# Similar Right Triangles

*Proofs updated.*

**Problem 1** *Adapted from Ohio's 2017 Geometry released item 17.*



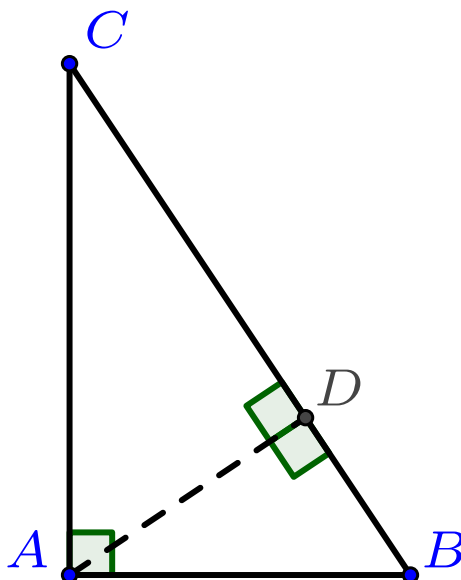
Complete the following proof that  $\triangle DAC$  is similar to  $\triangle DBA$ :

- (a)  $\triangle ABC \sim \triangle \boxed{DBA}$  by (AA similarity ✓/ CPCTC/ right triangle similarity) because they share  $\angle B$  and they each have a right angle.
- (b)  $\triangle ABC \sim \triangle DAC$  for the same reason because they share ( $\angle A$ /  $\angle B$ /  $\angle C$  ✓) and they each have a right angle.
- (c)  $\triangle DAC \sim \triangle \boxed{DBA}$  because they are both similar to  $\triangle ABC$ .

**Problem 2** *A different proof, also adapted from Ohio's 2017 Geometry released item 17.*

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Complete the following proof that  $\triangle DAC$  is similar to  $\triangle DBA$ :

- (a)  $\angle B$  and  $\angle BAD$  are complementary because they are acute angles in a right triangle.
- (b)  $\angle DAC$  and  $\angle BAD$  are complementary because they are adjacent angles that form  $\angle BAC$ , which is right.
- (c)  $\angle B \cong \angle DAC$  because they are both complementary to  $\angle BAD$ .
- (d)  $\triangle DAC \sim \triangle \boxed{DBA}$  by (AA similarity  $\checkmark$ / CPCTC/ right triangle similarity) because  $\angle B \cong \angle DAC$  and they each have a right angle.