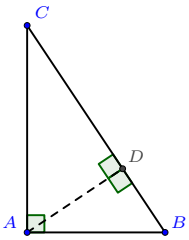
Similar Right Triangles

Two proofs.

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



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

(a) $\triangle DBA \sim \triangle \boxed{ABC}$ *by (AA similarity ✓/ CPCTC/ right triangle similarity) because they share $\angle B$ and they each have a right angle.*

(b) $\triangle DAC \sim \triangle \boxed{ABC}$ *for the same reason because they share ($\angle A$/ $\angle B$/ $\angle C$ ✓) and they each have a right angle.*

(c) $\triangle DAC \sim \triangle DBA$ *because (CPCTC/ right triangle similarity/ 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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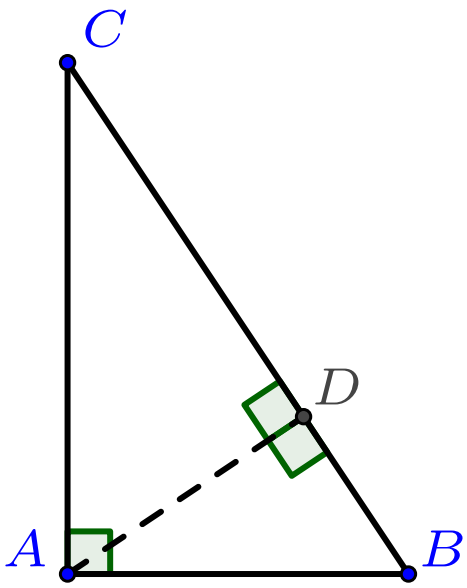

Complete the following proof that $\triangle DAC$ is similar to $\triangle DBA$:

(a) *$\angle B$ and $\angle BAD$ are* $\boxed{\textit{complementary}}$ *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 ✓/ acute/ obtuse).*

(c) *$\angle B \cong \angle DAC$ because they are both complementary to $\angle BAD$.*

(d) *$\triangle DAC \sim \triangle DBA$ by (AA similarity ✓/ CPCTC/ right triangle similarity) because $\angle B \cong \angle DAC$ and they each have a right angle.*