

LEVEL: EMERGING

1) $\triangle ABC$ has angles with measures of 35° and 85° . $\triangle DEF$ has angles with measures of 60° and 85° . If the two triangles are similar, what is the remaining angle measure in $\triangle ABC$?

- (A) 60°
- (B) 65°
- (C) 70°
- (D) 75°

2) $\triangle XYZ$ has angles with measures of 51° and 93° . $\triangle GHI$ has angles with measures of 51° and 36° . If the two triangles are similar, what is the remaining angle measure in $\triangle GHI$?

- (A) 36°
- (B) 51°
- (C) 90°
- (D) 93°

3) $\triangle XYZ$ has angles with measures of 60° and 80° . $\triangle UVW$ has angles with measures of 80° and 50° . Are they similar triangles?

- (A) Yes
- (B) No
- (C) Not enough information
- (D) Impossible to tell

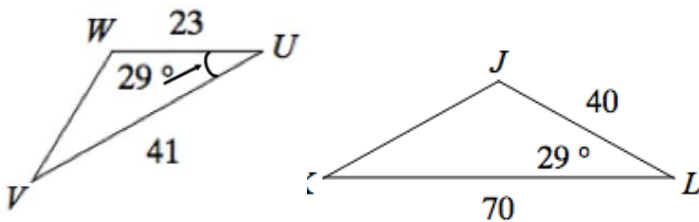
4) $\triangle XYZ$ has angles with measures of 63° and 17° . $\triangle UVW$ has angles with measures of 100° and 63° . Are they similar triangles?

- (A) Yes
- (B) No
- (C) Not enough information
- (D) Impossible to tell

LEVEL: PROFICIENT

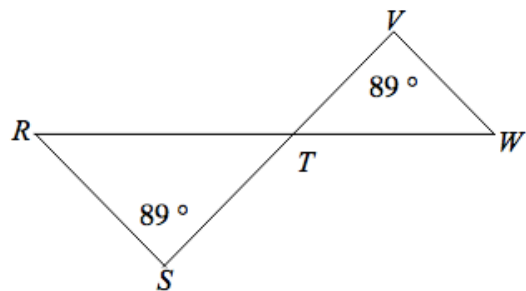
Directions: Based on the diagram, determine if there is enough information to state the triangles are similar. Select all that apply.

5)



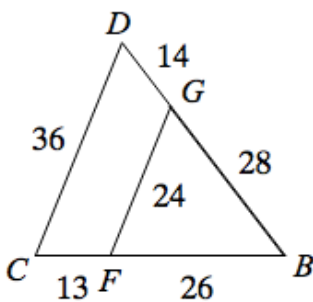
- (A) Yes (B) No (C) AA~ (D) SSS~ (E) SAS~

6)



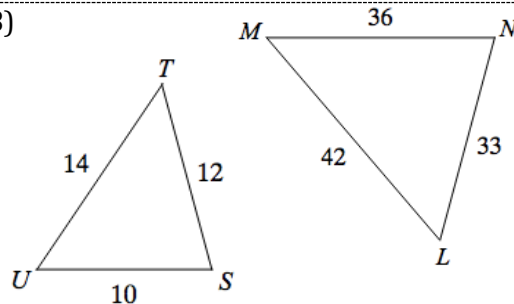
- (A) Yes (B) No (C) AA~ (D) SSS~ (E) SAS~

7)



- (A) Yes (B) No (C) AA~ (D) SSS~ (E) SAS~

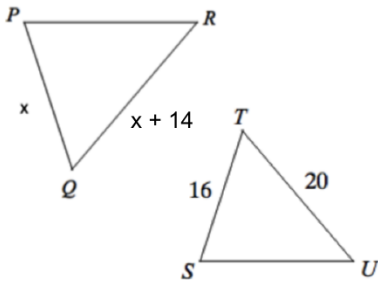
8)



- (A) Yes (B) No (C) AA~ (D) SSS~ (E) SAS~

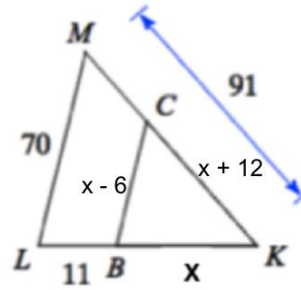
Directions: Find the value of x given that the triangles are similar.

9) $\triangle PQR \sim \triangle STU$



$x =$ _____

10)



$x =$ _____

Directions: Use the description of the two given triangles to find the indicated side length.

11) In $\triangle VUE$ and $\triangle GFE$, $\angle V \cong \angle G$ and $\angle F \cong \angle U$. The length of side $VE = 24$ and the length of side $GE = 39$. If the length of side $UV = 44$ and $UE = 26$, what is the measure of side EF ?

12) In $\triangle WVU$ and $\triangle FGU$, $\angle W \cong \angle F$ and $\angle V \cong \angle G$. The length of side $UV = 33$ and the length of side $UF = 18$. If the length of side $GU = 22$ and $GF = 31$, what is the measure of side VU ?

13) Make a sketch to show that the statement is FALSE.

“If two pairs of sides of two triangles are congruent, then the triangles are similar.”

LEVEL: MASTERY

14) Which of the following side lengths represent two similar triangles? Select all that apply.

- (A) $\triangle ABC$: 12 in, 8 in, 6 in
 $\triangle XYZ$: 24 in, 16 in, 10 in
- (B) $\triangle ABC$: 9 in, 4 in, 8 in
 $\triangle XYZ$: 13.5 in, 6 in, 12 in
- (C) $\triangle ABC$: 5 in, 7 in, 11 in
 $\triangle XYZ$: 12.5 in, 17.5 in, 27.5 in
- (D) $\triangle ABC$: 7 in, 12 in, 9 in
 $\triangle XYZ$: 5.25 in, 9 in, 4.5 in

15) In order to estimate the height h of a flagpole, a 5-foot tall student stands so that the tip of his shadow coincides with the tip of the flagpole's shadow. (a) Explain why the two triangles are similar. (b) What is the height of the flagpole?

(a)

(b)

