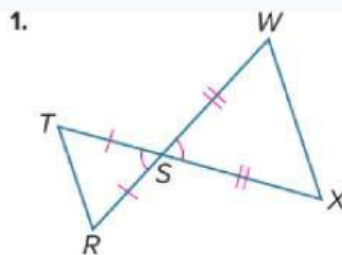


Mathematics Assessment — M3L4 – Similar Triangles: SSS and SAS Similarity

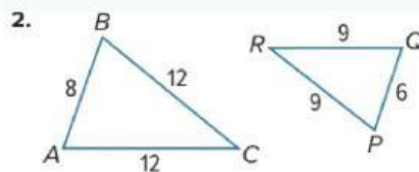
SECTION A • Determine Similarity

- 1 Determine whether the pair of triangles is similar. Which statement gives the correct conclusion and reasoning?



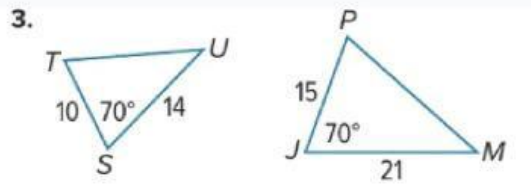
- A. No; there is not enough information to compare the triangles.
 B. Yes; the triangles are similar by SAS because two pairs of corresponding sides are proportional and the included angles are congruent.
 C. Yes; the triangles are similar by AA because all three angles are marked congruent.
 D. No; the triangles have equal corresponding sides, so they cannot be similar.

- 2 Determine whether the pair of triangles is similar. Which statement gives the correct conclusion and reasoning?



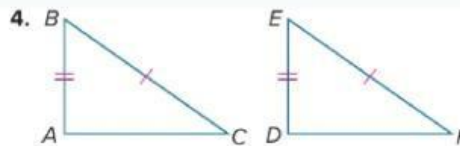
- A. No; only one pair of sides has the same ratio.
 B. No; the triangles have different side lengths.
 C. Yes; the triangles are similar by AA because two angles are given.
 D. Yes; the triangles are similar by SSS because the three pairs of corresponding sides have the same ratio.

- 3 Determine whether the pair of triangles is similar. Which statement gives the correct conclusion and reasoning?



- A. Yes; the triangles are similar by SAS because the included angles are congruent and the corresponding sides are proportional.
 B. No; the triangles are not similar because their side lengths are different.
 C. Yes; the triangles are similar by SSS because all three sides are given.
 D. No; one angle alone can never be used in a similarity test.

- 4 Determine whether the pair of triangles is similar. Which statement gives the correct conclusion and reasoning?

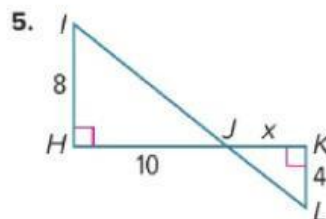


- A. No; the triangles have no corresponding sides.
 B. No; only the right angles are congruent.
 C. Yes; the right triangles are similar by the Hypotenuse-Leg (HL) relationship because the corresponding hypotenuses and legs are congruent.
 D. Yes; the triangles are similar by AA because all acute angles are marked.

SECTION B • Identify Similar Triangles and Find x

- 5 Identify the similar triangles and find the value of x.

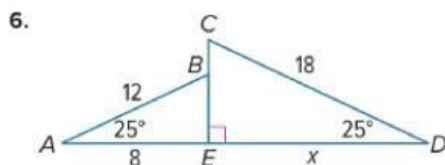
Identify the similar triangles. Then find the value of x.



- A. $\triangle HIJ \sim \triangle KJL$; $x = 4$
 B. $\triangle HIJ \sim \triangle KJL$; $x = 8$
 C. $\triangle HIJ \sim \triangle KJL$; $x = 5$
 D. $\triangle HIJ \sim \triangle KJL$; $x = 20$

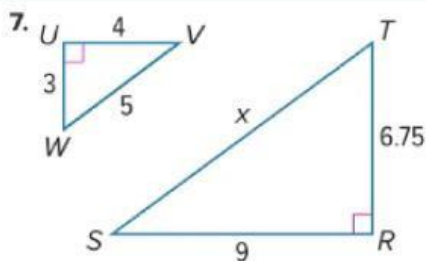
6 Identify the similar triangles and find the value of x .

Value of x .



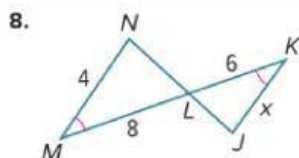
- A. $\triangle ABE \sim \triangle DCE$; $x = 12$
- B. $\triangle ABE \sim \triangle DCE$; $x = 8$
- C. $\triangle ABE \sim \triangle ECD$; $x = 9$
- D. $\triangle ABE \sim \triangle DEC$; $x = 27$

7 Identify the similar triangles and find the value of x .



- A. $\triangle UVW \sim \triangle RST$; $x = 8.75$
- B. $\triangle UVW \sim \triangle SRT$; $x = 11.25$
- C. $\triangle UVW \sim \triangle RST$; $x = 15$
- D. $\triangle UVW \sim \triangle RST$; $x = 11.25$

8 Identify the similar triangles and find the value of x .

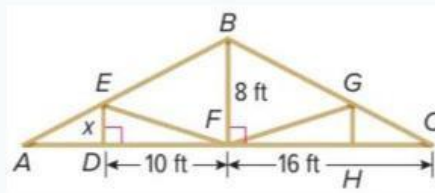


- A. $\triangle MNL \sim \triangle KJL$; $x = 4$
- B. $\triangle MNL \sim \triangle KJL$; $x = 3$
- C. $\triangle MNL \sim \triangle LJK$; $x = 6$
- D. $\triangle MNL \sim \triangle JKL$; $x = 2$

SECTION C • Applications of Similarity

9

ROOFING — The skeleton of a roof is shown. Find the value of x such that triangles DEF and FBC in the outline of the roof are similar.



- A. 5 ft
- B. 6.4 ft
- C. 12.8 ft
- D. 3.2 ft

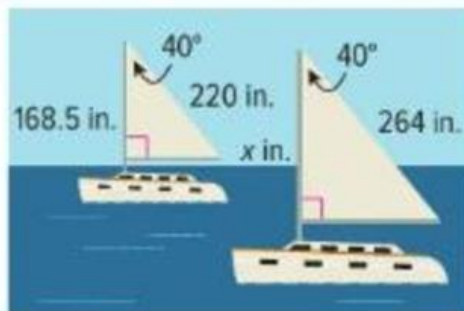
10

RADIO — A radio tower casts an 8-foot-long shadow at the same time that a vertical yardstick casts a shadow one-half inch long. If the triangles formed by the objects and their shadows are similar, how tall is the radio tower?

- A. 144 ft
- B. 288 ft
- C. 576 ft
- D. 864 ft

11

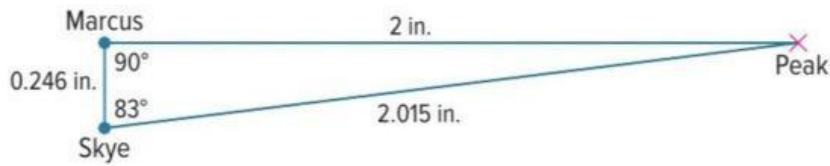
SAILING — The two sailboats shown are participating in a regatta. If the sails are similar, what is the value of x ?



- A. 132.0 in.
- B. 141.4 in.
- C. 158.4 in.
- D. 176.0 in.

12

- 12. MOUNTAIN PEAKS** Marcus and Skye want to estimate how far a mountain peak is from their houses. After taking some measurements, they construct a diagram.



The actual distance between Marcus and Skye's houses is $1\frac{1}{2}$ miles.

- What is the actual distance from Marcus's house to the peak of the mountain? Round your answer to the nearest tenth of a mile.
- What is the actual distance from Skye's house to the peak of the mountain? Round your answer to the nearest tenth of a mile.

- A. (a) 10.2 mi; (b) 10.3 mi
B. (a) 12.0 mi; (b) 12.1 mi
C. (a) 12.2 mi; (b) 12.4 mi
D. (a) 12.2 mi; (b) 12.3 mi