

Warm-Up

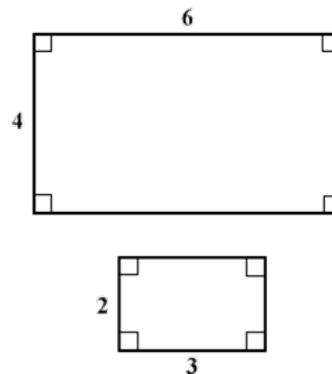
The height of the Statue of Liberty from the base to the top of the torch is 305 ft. Find the length of her finger.



Nov 11-8:40 AM

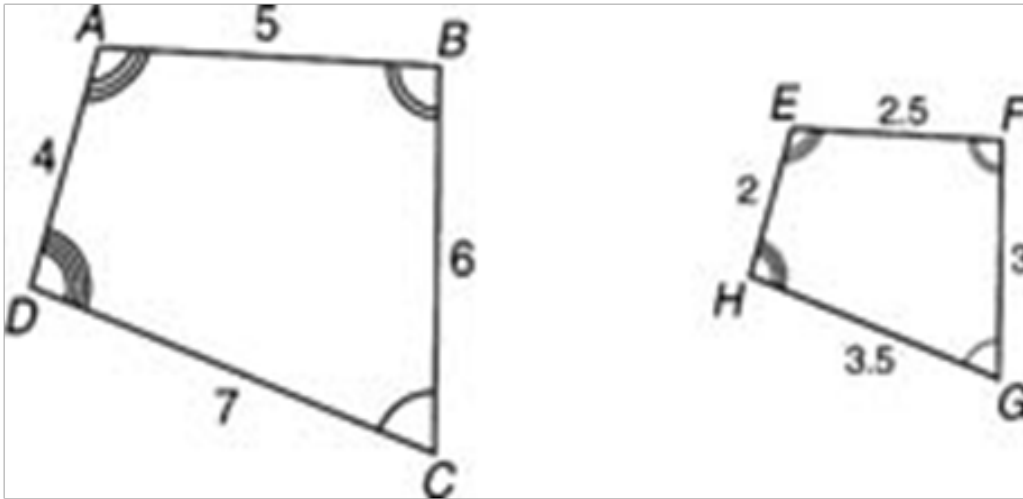
I. Similar Polygons

- All corresponding angles are _____.
- All corresponding sides are _____.
- Explain if the following quadrilaterals are similar or not.



Nov 19-7:03 AM

- Are these quadrilaterals similar?
- If so, what is the *similarity ratio*?

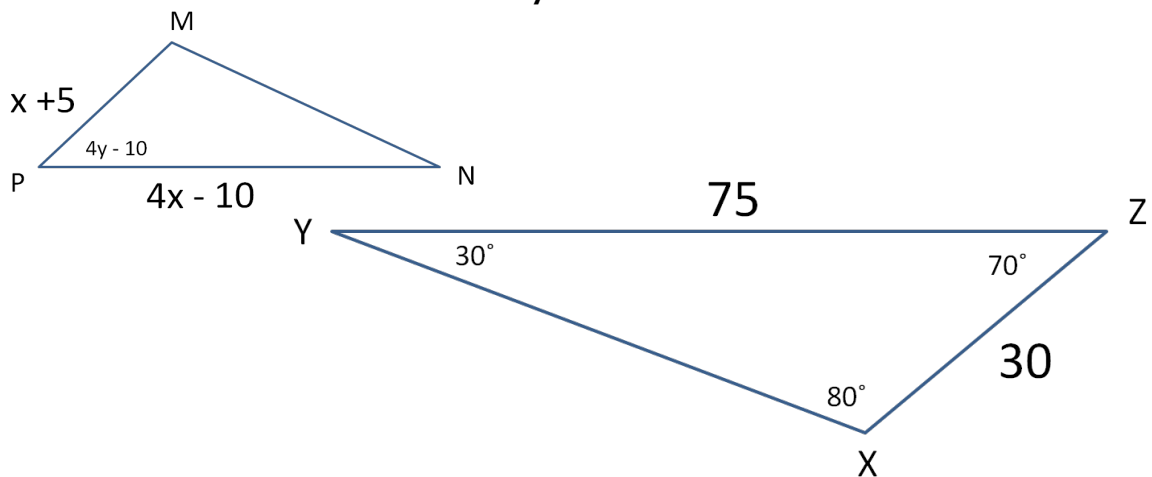


Hint: Move picture to see next 2 examples.

Nov 19-7:03 AM

II. Finding Corresponding Lengths and angles in Similar Polygons

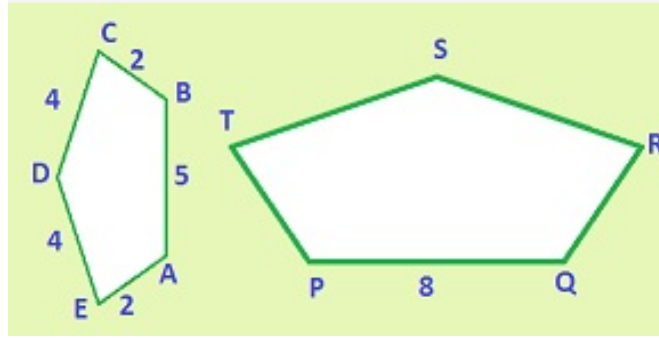
1. Find the value of x and y if $\triangle MNP \sim \triangle XYZ$.



Nov 19-7:34 AM

III. Perimeters of Similar Polygons

In the given diagram Polygon ABCDE ~ PQRST.

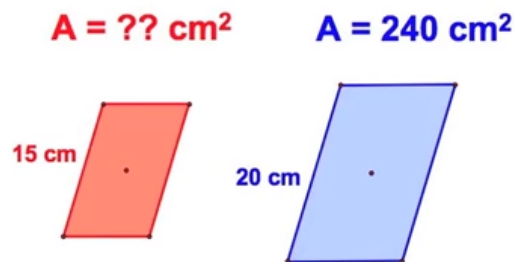


- If two polygons are similar, then the ratio of their perimeters is equal to the ratio of their corresponding side lengths.

Ex. perimeter of smaller polygons: 48 cm; ratio: $\frac{2}{3}$

Nov 4-10:52 AM

IV. Areas of Similar Polygons



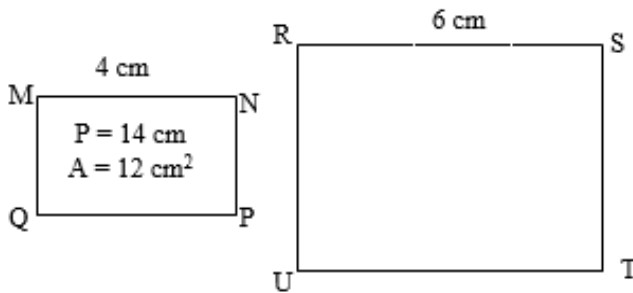
- If two polygons are similar, then the ratio of their perimeters is equal to the squares of the ratios of their corresponding side lengths.

Ex: Area of larger triangle: 96 cm²; Base of larger triangle: 12;
Base of smaller triangle: 3

Nov 4-10:52 AM

Warm up

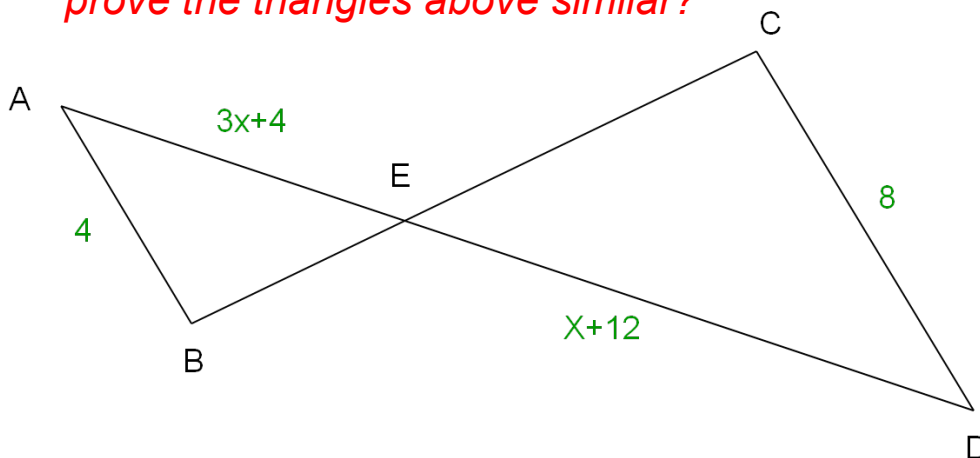
Identify the *similarity ratio* AND find the *perimeter* AND *area* of rectangle RSTU.



Nov 13-3:56 PM

8.2 & 8.3 Proving Triangles Similar by AA, SSS, & SAS

What additional information do you need to prove the triangles above similar?

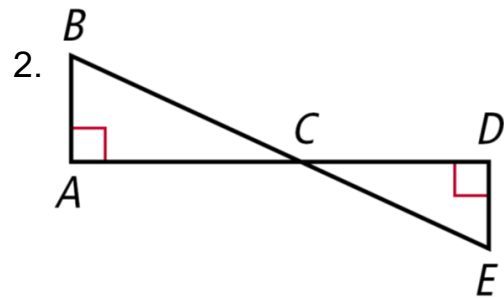
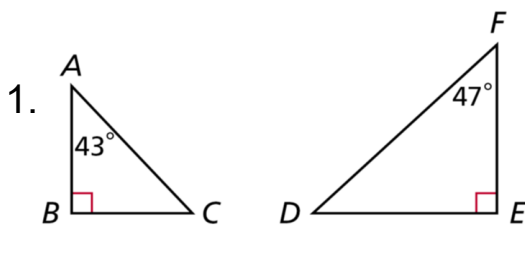


Nov 22-8:17 AM

Angle-Angle (AA) Similarity

POSTULATE	HYPOTHESIS	CONCLUSION
If two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar.		$\triangle ABC \sim \triangle DEF$

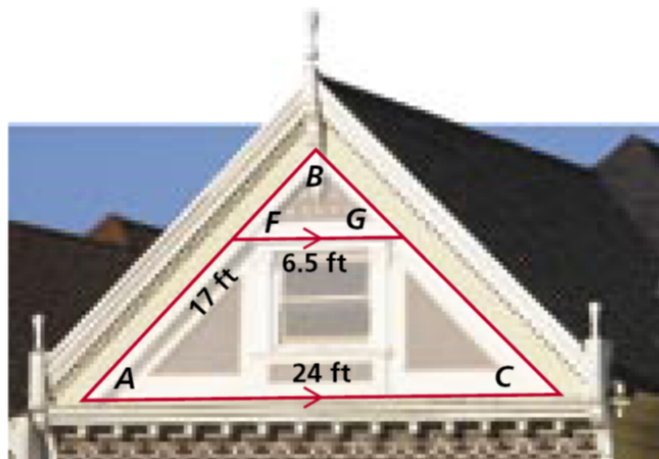
Determine if the following triangles are similar and if so, write a similarity statement.



Nov 22-8:17 AM

Angle Angle Practice Problem

Are the triangles below similar?



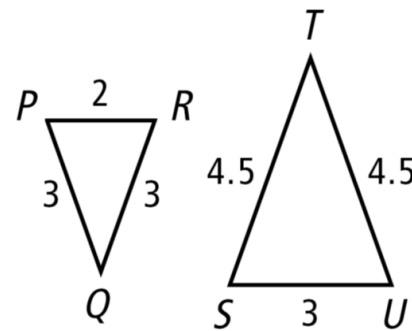
The photo shows a gable roof. $\overline{AC} \parallel \overline{FG}$. $\triangle ABC \sim \triangle FBG$. Find BA to the nearest tenth of a foot.

Nov 22-8:17 AM

Side-Side-Side (SSS) Similarity

THEOREM	HYPOTHESIS	CONCLUSION
If the three sides of one triangle are proportional to the three corresponding sides of another triangle, then the triangles are similar.		$\triangle ABC \sim \triangle DEF$

Example: Verify that the triangles are similar if $\triangle PQR$ and $\triangle STU$.

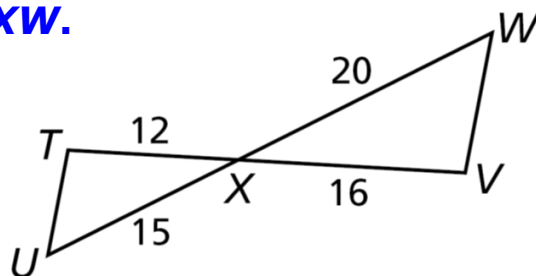


Nov 22-8:17 AM

Side-Angle-Side (SAS) Similarity

THEOREM	HYPOTHESIS	CONCLUSION
If two sides of one triangle are proportional to two sides of another triangle and their included angles are congruent, then the triangles are similar.		$\triangle ABC \sim \triangle DEF$

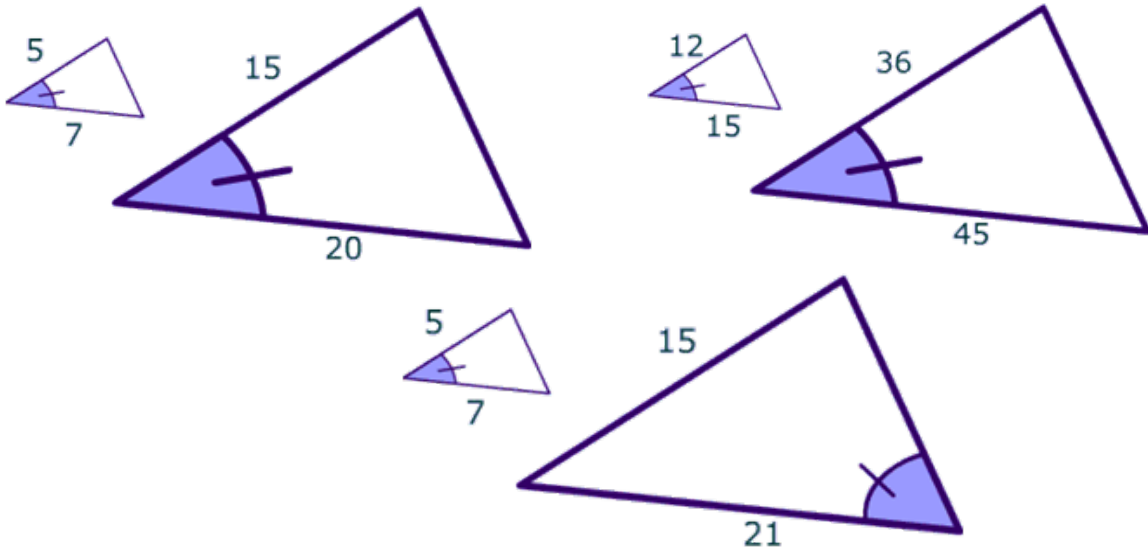
Verify that $\triangle TXU \sim \triangle VXW$.



Nov 22-8:17 AM

Side Angle Side Practice Problems

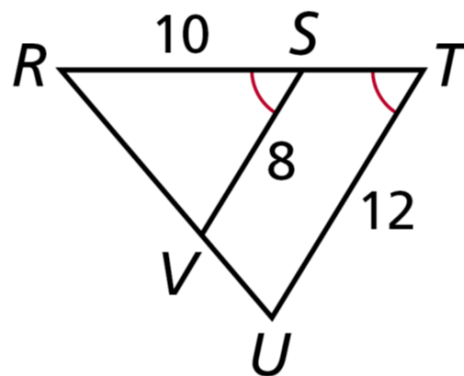
Are the triangles pictured below similar? Use SAS to determine the answer.



Nov 22-8:17 AM

Practice

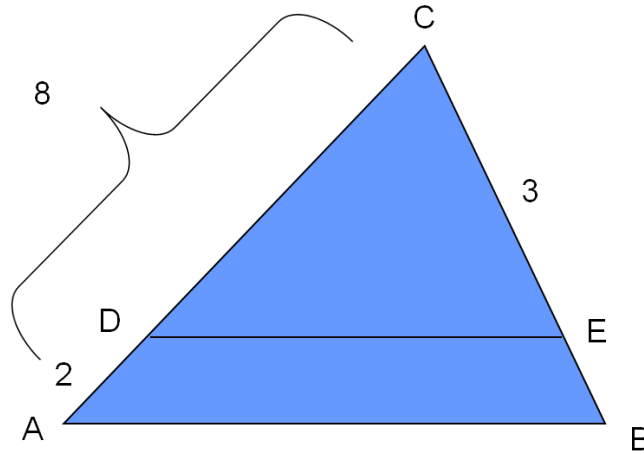
Explain why $\triangle RSV \sim \triangle RTU$ and then find RT .



Nov 14-2:31 PM

Solve for x using _____ Postulate

- In the figure below $\overline{AB} \parallel \overline{DE}$. Find CB.

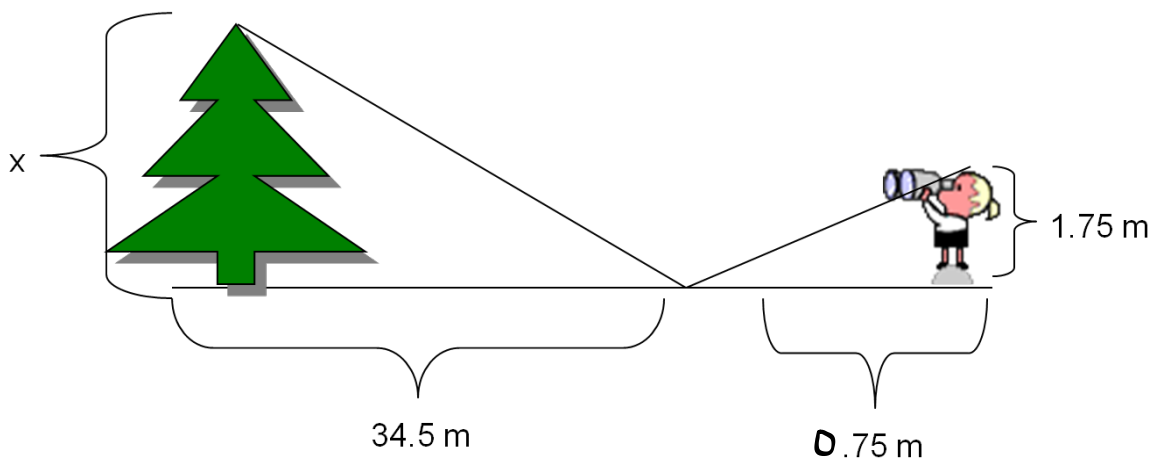


CB=

Nov 22-8:17 AM

Solve for x using SAS~ Postulate

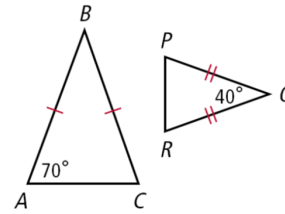
How tall is the tree?



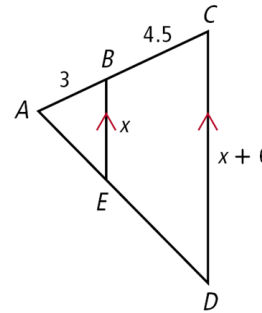
Hint: move tree to find answer.

Nov 22-8:17 AM

1. Explain why the triangles are similar and write a similarity statement.



2. Explain why the triangles are similar, then find BE and CD .



3. Rectangle ABCD has a length of 2.6 cm and a width of 1.8 cm. Rectangle WXYZ has a length of 7.8 cm and a width of 5.4 cm. Determine whether rectangle ABCD is similar to rectangle WXYZ. Explain your reasoning.

Nov 14-2:27 PM

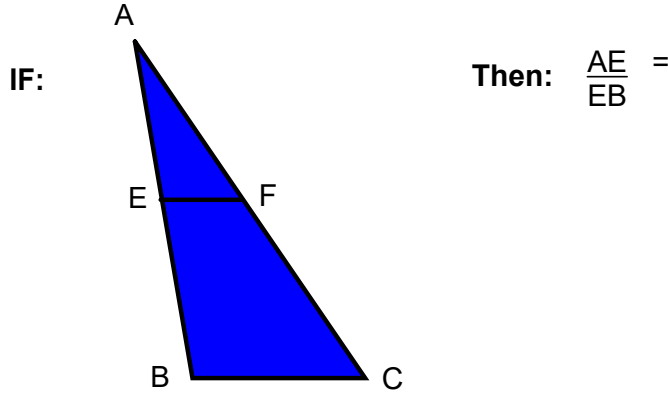
An engineer, Justin Jones, is planning a footbridge across a river. Currently, there is only an old cable bridge strung between two trees on opposite sides of the river. Unfortunately, the bridge is too unstable to walk across to find out its length. The engineer wants to build a new bridge which starts at the northern tree and spans the shortest distance across the river. How long will the new bridge be?



Did you use congruency or similarity to solve this problem and why?

Triangle Proportionality Theorem

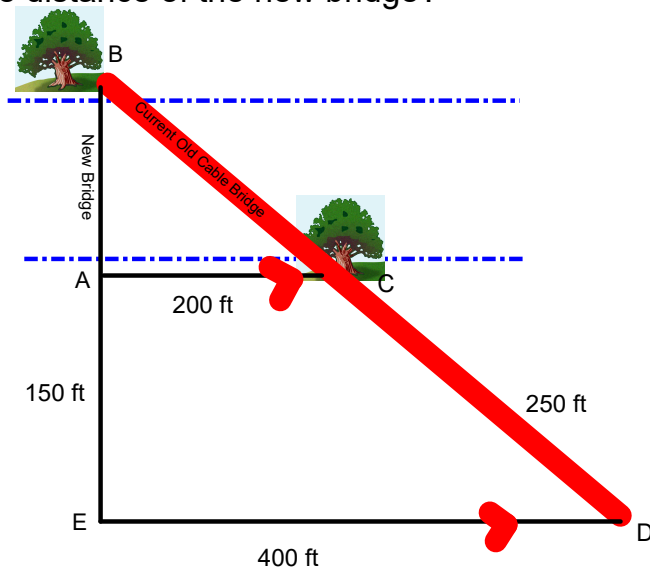
- If a line is parallel to a side of a triangle and intersects the other two sides, then it divides those sides _____.



Hint: drag ratio to the triangle to find proportion.

Nov 22-8:51 AM

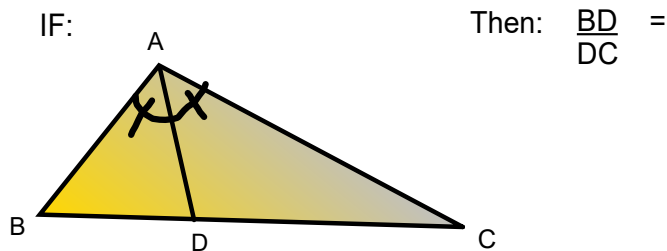
Application: Justin uses triangles to find the distance across the Trinity river. He makes the diagram below. Which triangles appear to be similar? What must Justin know about these triangles to conclude that they are similar? What is the distance of the new bridge?



Nov 12-4:13 PM

Triangle Angle Bisector Theorem

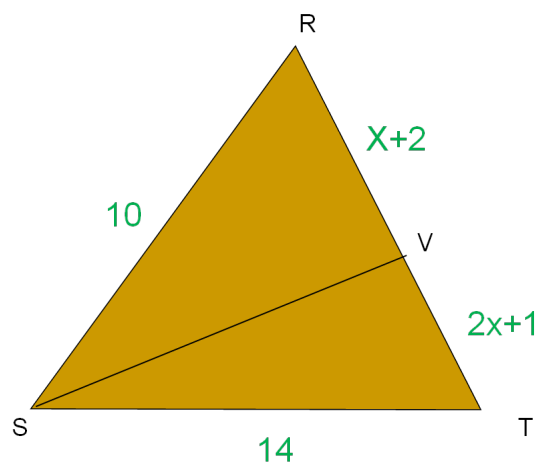
- An angle bisector of a triangle divides the opposite side into two segments whose lengths are _____ to the lengths of the other two sides.



Hint: drag ratio to the triangle to find proportion.

Nov 22-8:51 AM

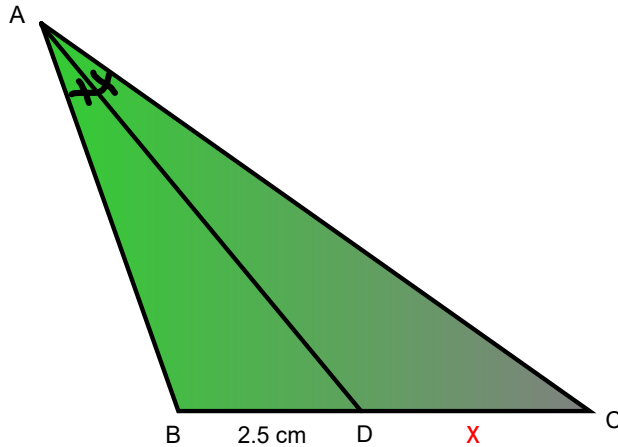
Practice: Solve for x if \overline{SV} is an angle bisector.



Hint: move triangle to check you answer.

Nov 22-8:51 AM

Practice: If \overline{AC} is twice as long as \overline{AB} , what is the length of \overline{DC} ?



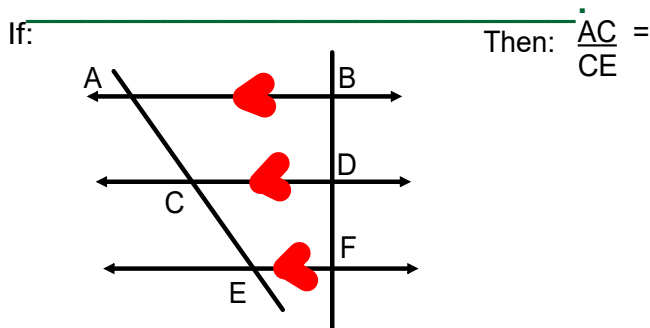
- F. 2.5 cm
- G. 3.75 cm
- H. 5 cm Correct
- J. 15 cm

Hint: Move answers to triangle to check answer

Dec 2-8:29 AM

Two-Transversal Proportionality:

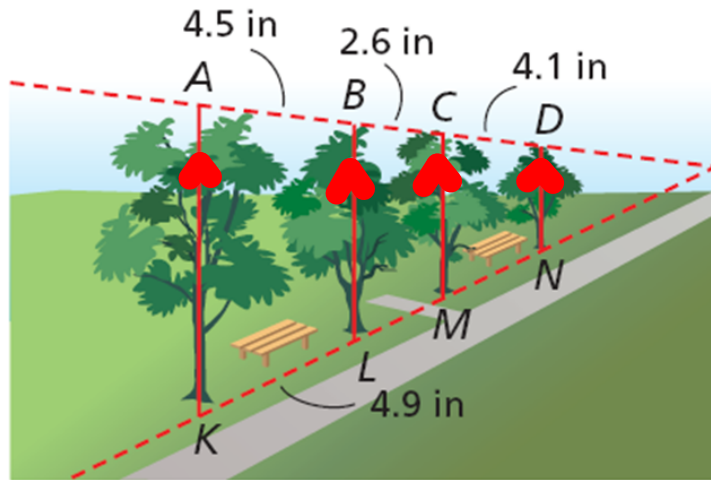
- If 3 or more _____ lines intersect two transversals, they cut off the transversals



Hint: drag the ratio to the box to find proportion.

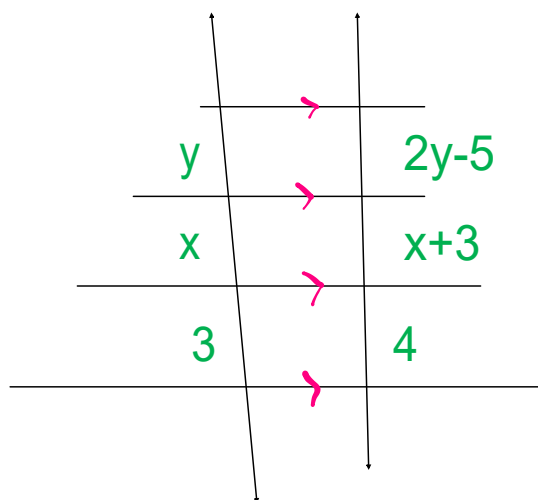
Nov 22-8:51 AM

Application: Suppose that an artist decided to make a larger sketch of the trees. In the figure, if $AB = 4.5$ in., $BC = 2.6$ in., $CD = 4.1$ in., and $KL = 4.9$ in., find LM and MN to the nearest tenth of an inch.



Nov 15-12:30 PM

Practice: Solve for x and y .

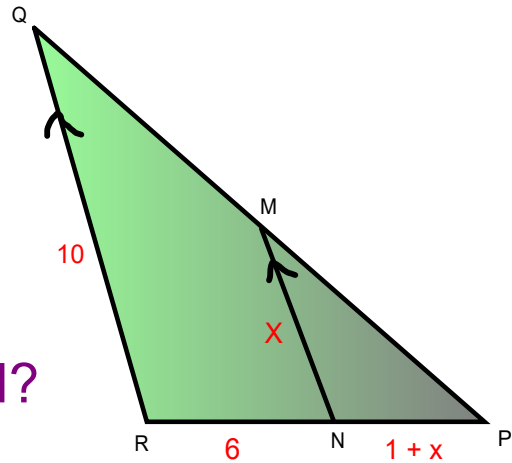


Nov 22-8:51 AM

DAY TWO Warm up:

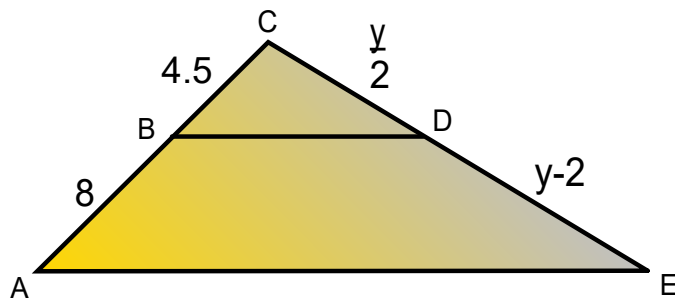
What is the measure of MN?

Answer: $MN = 5$



Dec 2-8:36 AM

In the diagram below, a metal support brace is added to stabilize a metal triangle. The metal brace is parallel to the base and divides the left side into a 4.5-foot and 8-foot section. Find the length of CD.

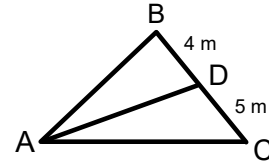


Check the answer by moving the triangle.

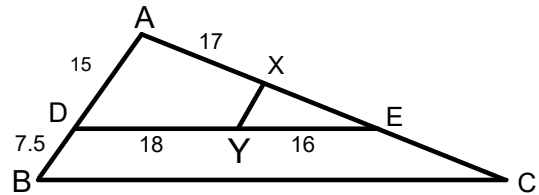
Nov 22-8:51 AM

Application

1. The perimeter of triangle ABC is 29 m. \overline{AD} bisects angle A. Find AB and AC.



2. Given that $\overline{DE} \parallel \overline{BC}$, $\overline{XY} \parallel \overline{AD}$. Find EC.



Nov 17-11:15 AM