

AIM: HOW DO WE SOLVE PROPORTIONS IN SIMILAR RIGHT TRIANGLES (DAY 2- HLLS)?

Do Now: If \overline{YZ} is dilated by a factor of 2 about a point not on \overline{YZ} to produce the image $\overline{Y'Z'}$, then which of the following is true?

(1) $\overline{Y'Z'} \parallel \overline{YZ}$ and $Y'Z' = \frac{1}{2}YZ$

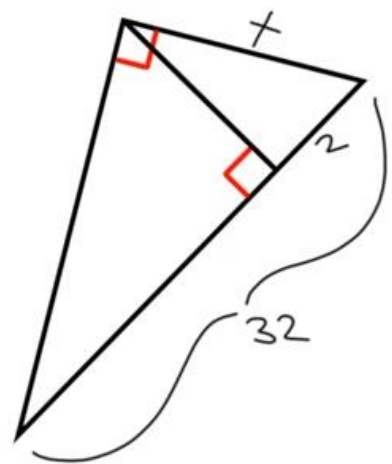
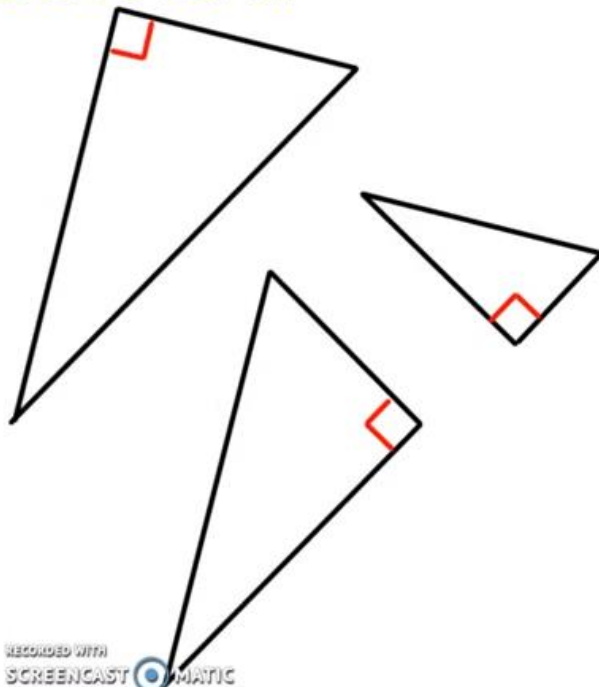
(3) $\overline{Y'Z'} \perp \overline{YZ}$ and $Y'Z' = 2YZ$

(2) $\overline{Y'Z'} \perp \overline{YZ}$ and $Y'Z' = \frac{1}{2}YZ$

(4) $\overline{Y'Z'} \parallel \overline{YZ}$ and $Y'Z' = 2YZ$

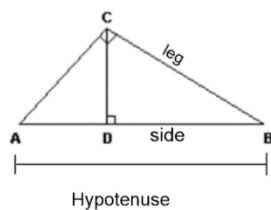
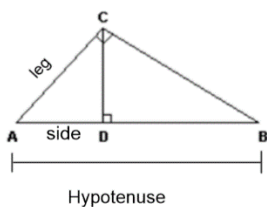
Follow along with the video and complete the following example: (9:49-12:42)

Solve for x:



WHAT IS AN EASIER WAY TO DO THIS?!

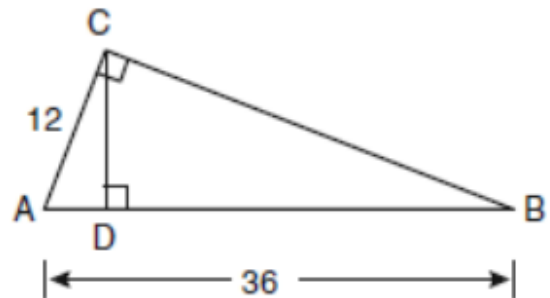
GEOMETRIC MEAN (LEG) THEOREM



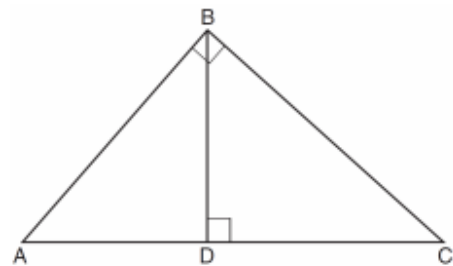
****Use the Hypotenuse of the largest triangle****
****Use the side closest to the marked leg****

PRACTICE PROBLEMS

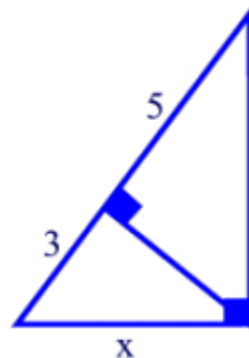
- 1) In the diagram below of right triangle ACB , altitude \overline{CD} is drawn to hypotenuse \overline{AB} . If $AB = 36$ and $AC = 12$, what is the length of \overline{AD} ?



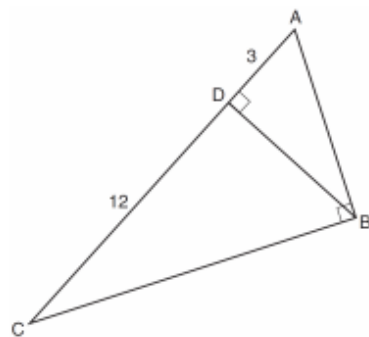
- 2) In right triangle ABC shown below, altitude \overline{BD} is drawn to hypotenuse \overline{AC} . If $AD = 8$ and $DC = 10$, determine and state the length of \overline{AB} .



- 3) Given the diagram to the right, solve for x , in simplest radical form.

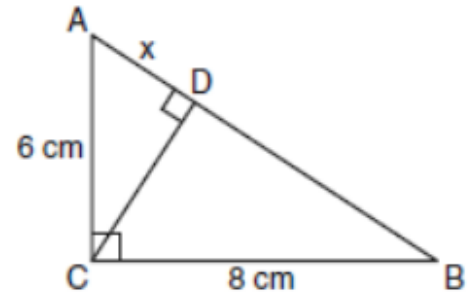


- 4) In right triangle ABC shown in the diagram below, altitude \overline{BD} is drawn to hypotenuse \overline{AC} , $CD = 12$, and $AD = 3$. What is the length of \overline{AB} , in simplest radical form?



7)

In the diagram below, the length of the legs \overline{AC} and \overline{BC} of right triangle $\triangle ABC$ are 6 cm and 8 cm, respectively. Altitude \overline{CD} is drawn to the hypotenuse of $\triangle ABC$. What is the length of \overline{AD} to the nearest tenth of a centimeter?



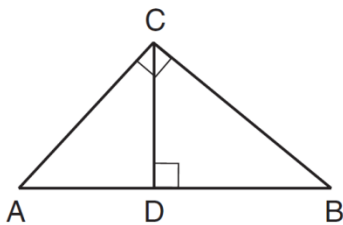
HOW DO WE KNOW IF WE ARE USING HLLS OR SAAS?

If the _____ is labeled with a number or variable, then you are using _____!

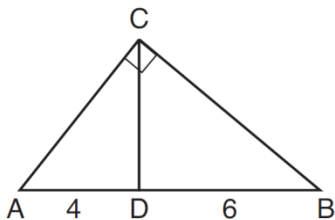
If the altitude has nothing marked on it, then you are using _____!

HLLS & SAAS- MIXED PRACTICE!

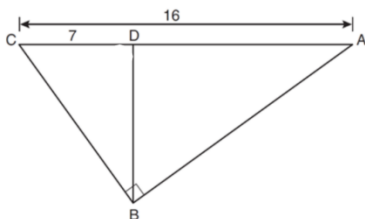
1. In the diagram below, \overline{CD} is the altitude drawn to the hypotenuse \overline{AB} of right triangle ABC . If $AD = 8$ and $AB = 17$ find the length of the altitude in simplest radical form.



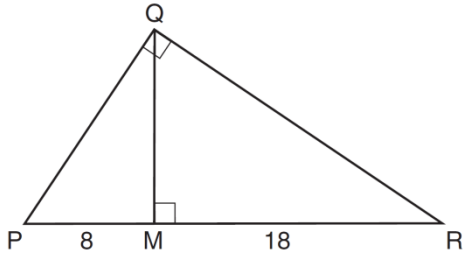
2. In the diagram of right triangle ABC , \overline{CD} intersects hypotenuse \overline{AB} at D . If $AD = 4$ and $DB = 6$, which length of \overline{AC} makes $\overline{CD} \perp \overline{AB}$?



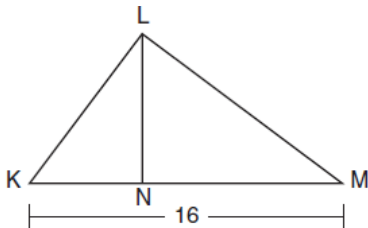
3. In the diagram of right triangle ABC , \overline{BD} intersects hypotenuse \overline{AC} at D . If $AC = 16$ and $CD = 7$, in simplest radical form, what length of \overline{BD} makes $\overline{BD} \perp \overline{AC}$?



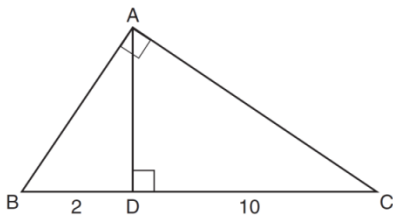
4. In the diagram below, \overline{QM} is an altitude of right triangle PQR , $PM = 8$, and $RM = 18$. What is the length of \overline{QM} ?



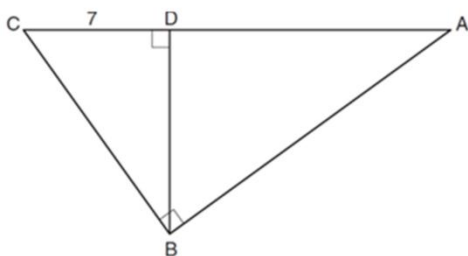
5. Kirstie is testing values that would make triangle KLM a right triangle when \overline{LN} is an altitude, as shown below. If $KM = 16$, and $LN = 12$. Determine the length of \overline{NM} .



6. Triangle ABC shown below is a right triangle with \overline{AD} drawn to the hypotenuse \overline{BC} . If $BD = 2$ and $DC = 10$, what length of AB , in simplest radical form, makes $\overline{AD} \perp \overline{BC}$?

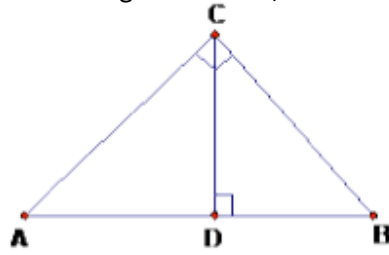


7. In the diagram below of right triangle ABC , altitude BD is drawn to hypotenuse AC . $AD=4$, and $CD=7$. What is the length of AB ?



8. In right triangle ABC, CD is the altitude drawn to hypotenuse AB. If the length of CD = 8, and AD is 12 units more than DB:

a) Find DB.



b) Using your answers from above, find the length of CB in *simplest radical form*.

9.

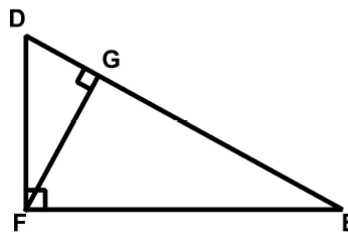
In the diagram of $\triangle DEF$, the altitude from right angle $\angle DFE$ has been drawn to \overline{DE} . If $DG = 4$ and $GE = 8$, then which of the following is the length of \overline{FG} ?

(1) $4\sqrt{2}$

(3) 12

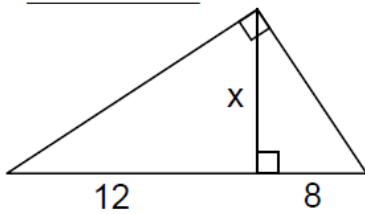
(2) $3\sqrt{10}$

(4) 6

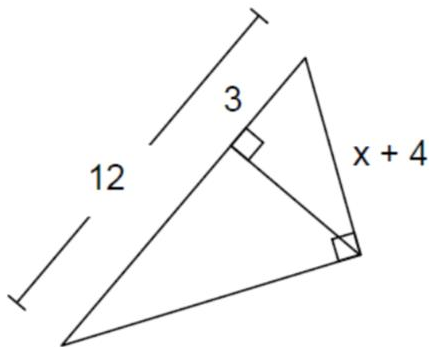


10.

X = _____



11.



Name: _____

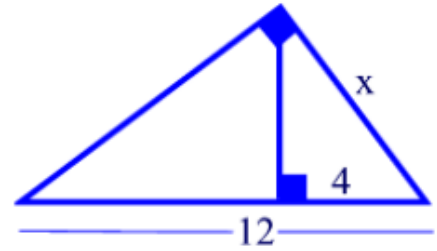
Date: _____

UNIT 5

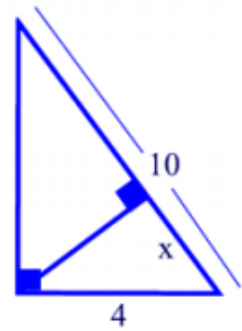
LESSON 6

HOMEWORK

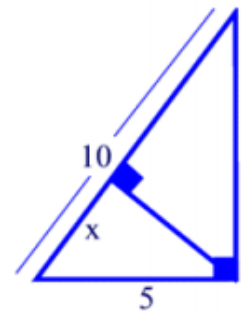
1. Solve for x , in simplest radical form.



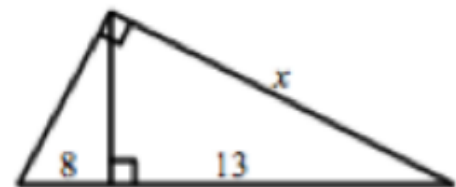
2. Solve for x .



3. Solve for x .



4. Solve for x , to the nearest tenth.



5. Triangle ABC shown below is a right triangle with altitude AD drawn to the hypotenuse BC . If $BD = 2$ and $DC = 10$, what is the length of AB in simplest radical form?

