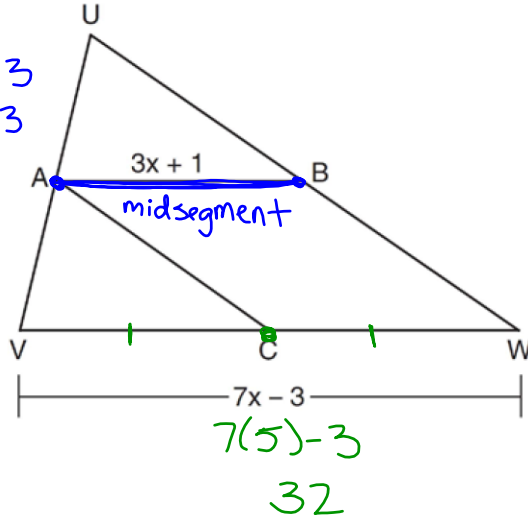


DO NOW

In the diagram of $\triangle UVW$ below, A is the midpoint of \overline{UV} , B is the midpoint of \overline{UW} , C is the midpoint of \overline{VW} , and \overline{AB} and \overline{AC} are drawn.

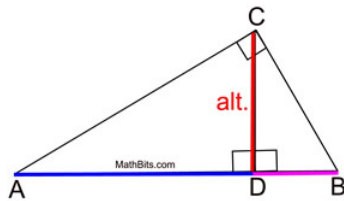
If $VW = 7x - 3$ and $AB = 3x + 1$, what is the length of \overline{VC} ?

- $AB = \frac{1}{2} VW$
 $2(3x+1) = 7x-3$
 $6x+2 = 7x-3$
 $5 = x$
- 1) 5
 - 2) 13
 - 3) 16
 - 4) 32



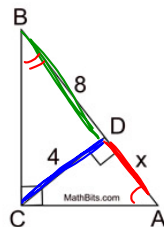
Mar 2-12:17 PM

The **altitude** to the hypotenuse of a right triangle is the mean proportional between the lengths of the legs on the hypotenuse ("altitude rule")



$$\frac{AD}{CD} = \frac{CD}{DB}$$

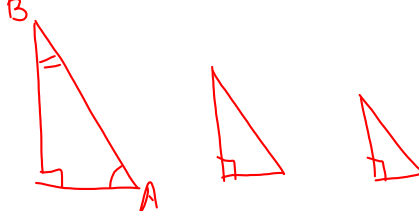
EX: Find x .



$$\frac{x}{4} = \frac{4}{8}$$

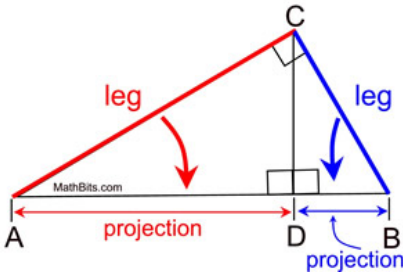
$$8x = 16$$

$$x = 2$$



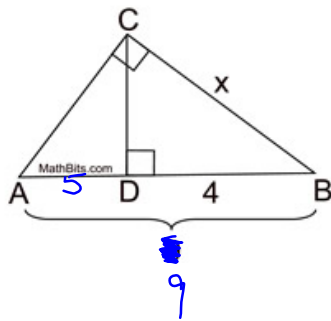
Mar 1-11:06 AM

The **leg** of a right triangle is the mean proportional between the hypotenuse and the projection of the leg on the hypotenuse ("leg rule")



$$\frac{AB}{AC} = \frac{AC}{AD} \quad \text{or} \quad \frac{AB}{CB} = \frac{CB}{DB}$$

EX: Find x.



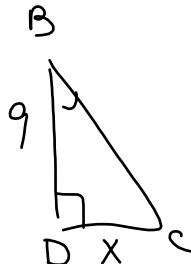
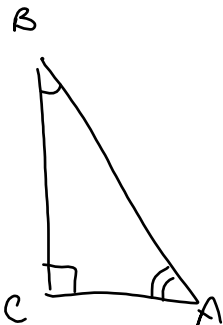
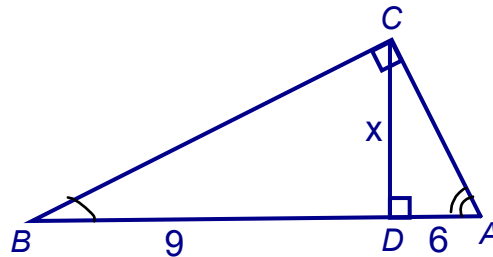
$$\frac{9}{x} = \frac{x}{4}$$

$$x^2 = 36$$

$$x = 6$$

Jan 9-8:21 AM

In right ABC, altitude CD is drawn to hypotenuse AB. Find the value of x.



~~$$\frac{6}{x} = \frac{x}{9}$$~~

$$x^2 = 54$$

$$x = \sqrt{54}$$

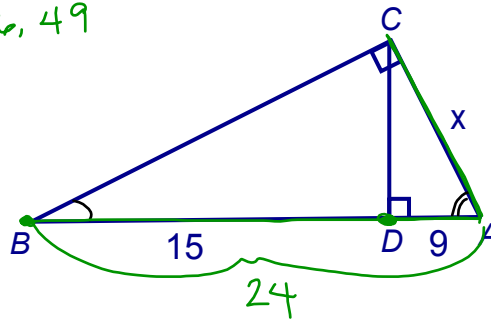
$$\sqrt{9} \cdot \sqrt{6}$$

$$x = 3\sqrt{6}$$

Mar 2-12:19 PM

In right ABC, altitude CD is drawn to hypotenuse AB.
Find the value of x.

4, 9, 16, 25, 36, 49



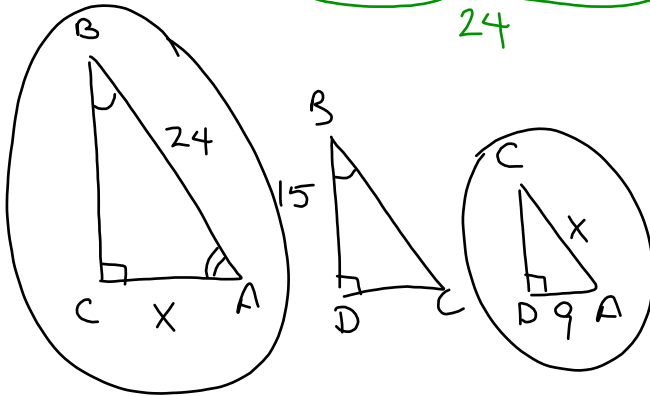
$$\frac{24}{x} = \frac{x}{9}$$

$$x^2 = 216$$

$$x = \sqrt{216}$$

$$x = \sqrt{36} \cdot \sqrt{6}$$

$$x = 6\sqrt{6}$$



Mar 2-12:22 PM