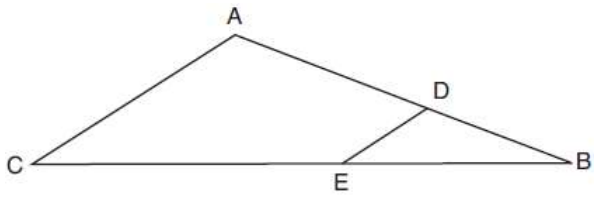
Name _____ Date _____
Mr. Schlansky Geometry

Similar Triangles with Algebra

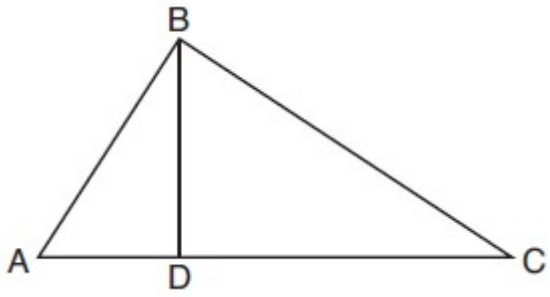
1. In the diagram of $\triangle ABC$ below, points D and E are on sides $\overline{AB}$ and $\overline{CB}$ respectively, such that $\overline{DE} \parallel \overline{AC}$.



If EB is 3 more than DB, $AB = 14$, and $CB = 21$, what is the length of $\overline{AD}$?

1) 6
2) 8
3) 9
4) 12

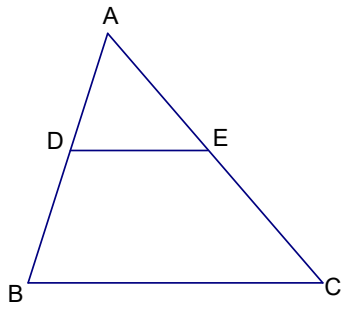
2. In the diagram below of right triangle ABC, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$.



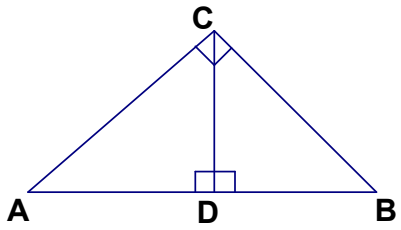
If $BD = 4$, $AD = x - 6$, and $CD = x$, what is the length of $\overline{CD}$?

1) 5
2) 2
3) 8
4) 11

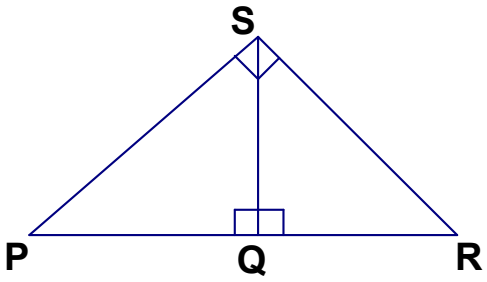
3. In triangle ABC, $\overline{DE} \parallel \overline{BC}$. If $\overline{AD} = 2$, $\overline{DB} = x + 1$, $\overline{AE} = x$, and $\overline{EC} = x + 6$, find $\overline{AE}$



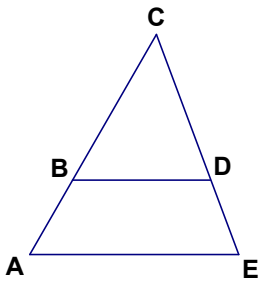
4. Altitude $\overline{CD}$ is drawn to right triangle ABC. If $\overline{AC} = 8$, $\overline{AB} = x$, and $\overline{AD} = x - 12$. Find the measure of $\overline{AD}$.



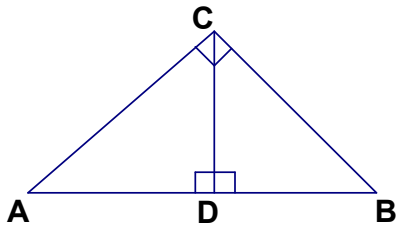
5. Altitude $\overline{SQ}$ is drawn to right triangle PSR. If $\overline{PQ} = 12$ and $\overline{QR}$ is 3 less than $\overline{SQ}$, find the length of $\overline{QR}$.



6. In the diagram, $\overline{BD} \parallel \overline{AE}$, $\overline{CB} = x + 3$, $\overline{BA} = 2$, $\overline{CD} = 2$, and $\overline{DE}$ = x. Find $\overline{DE}$.



7. Altitude $\overline{CD}$ is drawn to right triangle ABC. The measure of $\overline{DB}$ is 9 less than $\overline{DA}$. If the altitude is 6, find the measure of $\overline{AD}$.



8. In the diagram, $\overline{ED} \parallel \overline{BC}$, $\overline{AE}$ is 7 less than $\overline{CB}$. If $\overline{ED}$ = 5 and $\overline{EC}$ = 3, find the measure of $\overline{AE}$.