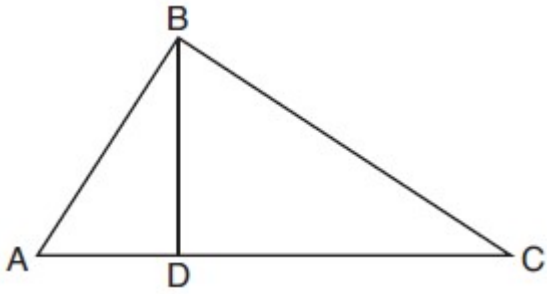
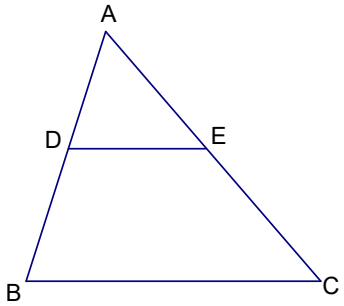
Name _____ Date _____
Mr. Schlansky Geometry

Similar Triangles with Quadratics

1. 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 $\overline{CD}$?

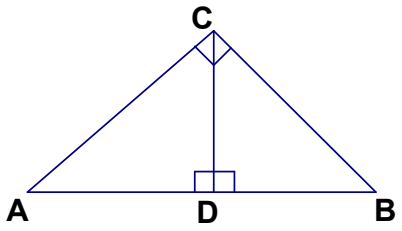


2. In triangle ABC, $\overline{DE} \parallel \overline{BC}$. If $\overline{AD} = 2$, $\overline{DB} = x + 1$, $\overline{AE} = x$, and $\overline{EC} = x + 6$, find $\overline{AE}$

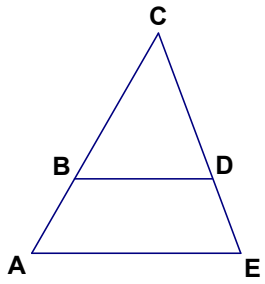


3. $\Delta HAI \sim \Delta CRE$. If $\overline{HA} = x$, $\overline{CR} = 6$, $\overline{HI} = 8$, and $\overline{CE} = x + 8$, determine and state the length of $\overline{CE}$.

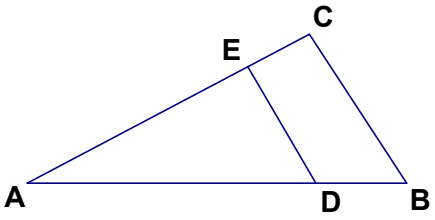
4. Altitude $\overline{CD}$ is drawn to right triangle ABC. If $\overline{AC} = 8$, $\overline{AB}$ = x, and $\overline{AD}$ = x – 12. Find the measure of $\overline{AD}$.



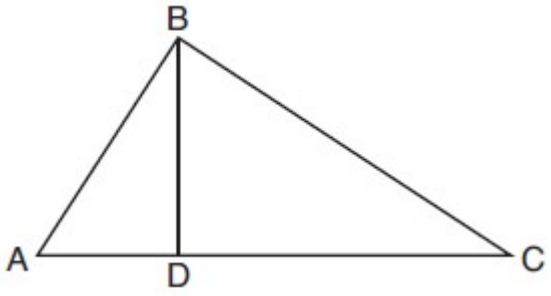
5. In the diagram, $\overline{BD} \parallel \overline{AE}$, $\overline{CB} = x + 3$, $\overline{BA} = 2$, $\overline{CD} = 2$, and $\overline{DE}$ = x. Find $\overline{DE}$.



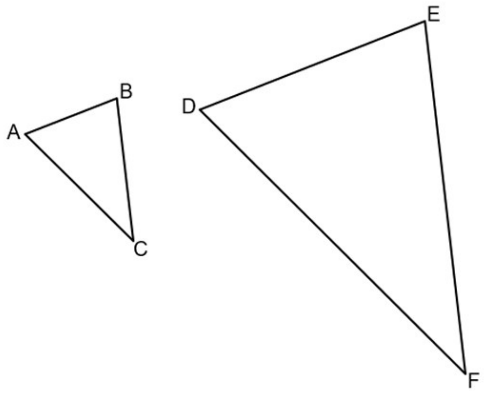
6. In the diagram, $\overline{ED} \parallel \overline{BC}$, $\overline{AE} = x + 2$, $\overline{DB} = x - 1$, $\overline{AD}$ = 9 and $\overline{EC}$ = 2, find the measure of $\overline{AE}$.



7. In the diagram, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$. If $\overline{AB} = x - 1$, $\overline{DC} = 5$ and $\overline{AD} = 4$, find $\overline{AB}$.



8. In the diagram below, $\Delta ABC \sim DEF$. If $\overline{AB} = 4$, $\overline{BC} = x - 1$, $\overline{DE} = x + 3$, and $\overline{EF} = 15$, determine and state the length of $\overline{DE}$.



9. In the diagram, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$. If $\overline{BD} = x + 2$, $\overline{DC} = 8$ and $\overline{AD} = 2$, find $\overline{BD}$.