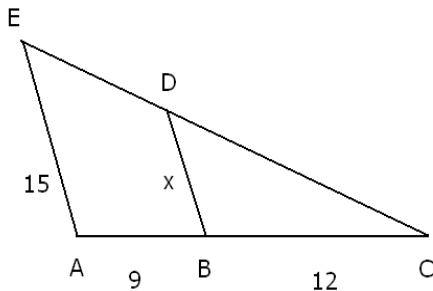
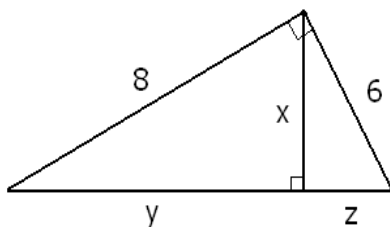


Problem Set 2

- Find the length of the diagonal of the rectangle with sides 4 m and 7 m long. Express your answer
 - as the exact value
 - as an approximation, rounded to 3 decimal places
- Two sides of a right triangle are 3 yd and 11 yd long. Find the third side.
- The height of a regular triangle is 4 m long. Find the length of its sides. Express your answer
 - as the exact value.
 - as an approximation, rounded to 3 decimal places.
- The ratio of cats to dogs was 7 to 12. The number of cats was 140. How many dogs were there?
- Find the distance between the points $(-1, 4)$ and $(-8, 28)$.
- To obtain the right color, we need to mix red paint with blue paint in a ratio of 2 to 5. How much red paint should be mixed with 20 gallons of blue paint?
- Convert 150 feet to yards. (1 yd=3 ft)
- Convert 0.2 years to minutes. (Use 1 year = 365 days)
- A tree casts a shadow of 24 ft at the same time a 4 ft vertical yardstick casts a shadow of 3.2 ft. How tall is the tree?
- The triangles ABC and $A'B'C''$ are similar. Find b if $c = 12$ in, $c' = 2.4$ in, and $b' = 3.5$ in.
- Find x if AE and DB are parallel.



- The picture below shows a right triangle. Find x , y , and z .



13. A 6.1 ft tall person is standing 43.8 ft away from a street light that is 28 ft tall. How long is his shadow?
14. Find x if $\alpha = 30^\circ$ and $\beta = 60^\circ$.

