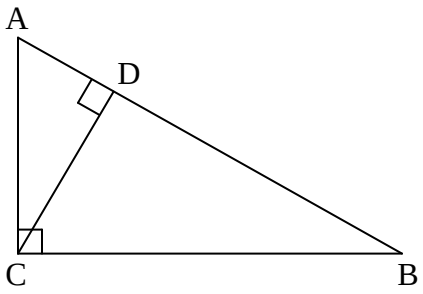
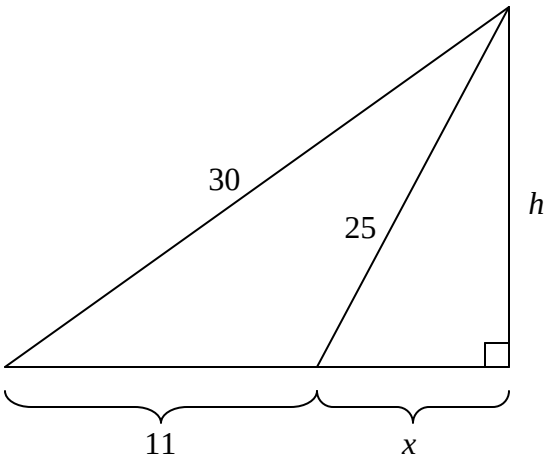
Name_____Per._____Date_____

Honors Geometry Practice Test

1. In the following Δ, AD = $x - 2$, DB = $3x - 3$, and CD = $x + 1$.
   Find x and the exact value of AC.

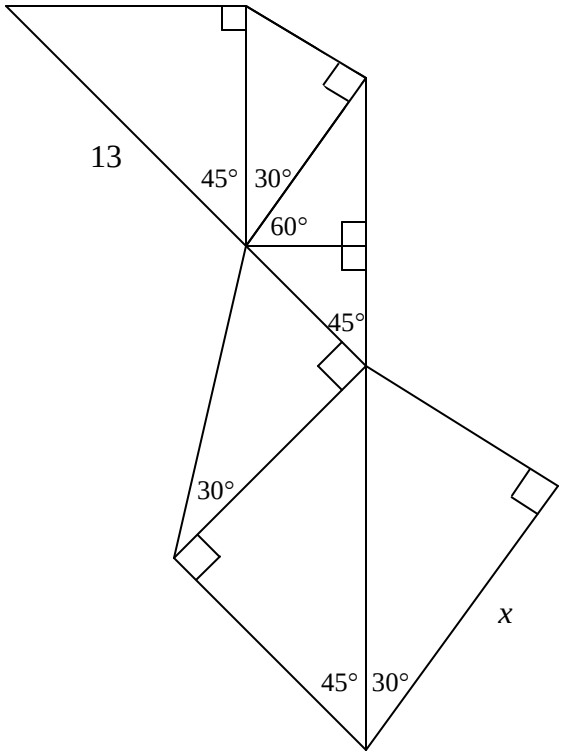


2. Find x and h in the following figure.

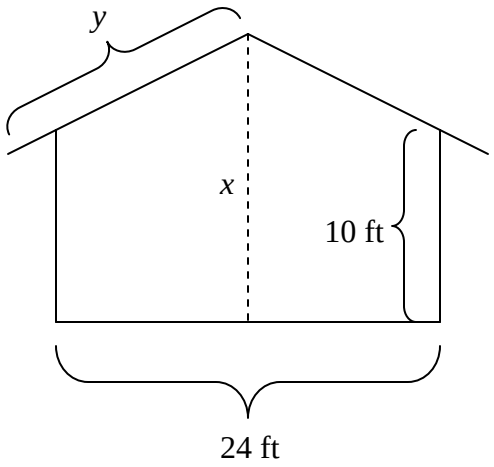


3. In the movie **The Wizard of Oz** the Scarecrow is looking for a brain. When the wizard presents him with a Doctor of Thinkology degree, the Scarecrow immediately announces "The sum of the square roots of any two sides of an isosceles triangle is equal to the square root of the remaining side." Do you agree with the "Scarecrow Theorem"? Provide proof or a counter example to support your answer.

4. Find the **EXACT** value of x in the following figure.



5. The roof of the house shown is known to have a **pitch** of "4 in 12." That is, the roof rises 4 feet for each 12 feet of span (horizontal distance). The width of the house has been measured to be 24 feet wide. The height has been measure to be 10 feet high.
Find gable height *x* to the roof and the length of the rafter *y*. (Assume an 18 in. overhang).

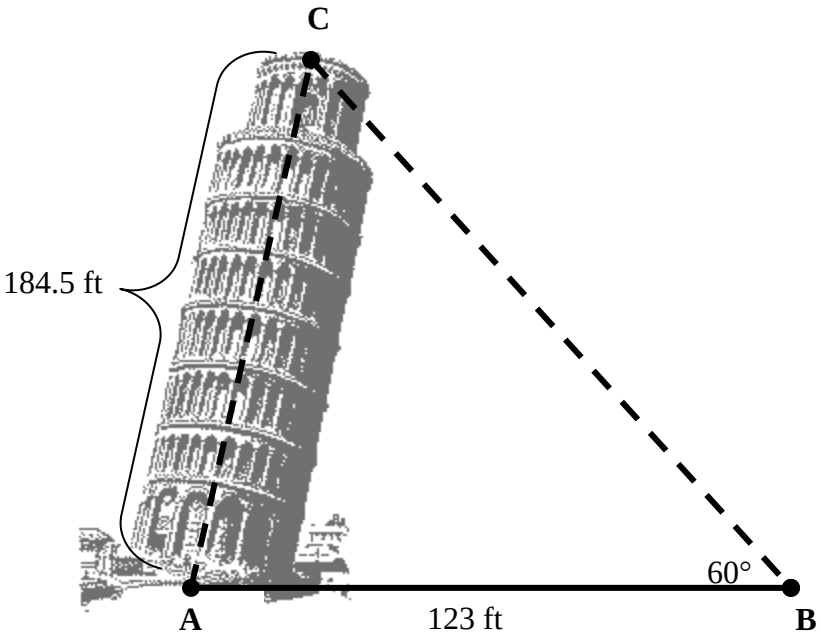


6. The famous Leaning Tower of Pisa was originally 184.5 ft high. At a distance of 123 ft. from the base of the tower, the angle of elevation to the top of the tower is found to be 60°.

   a.) Find the measure of $\angle CAB$ indicated in the following figure.

   b.) Find the perpendicular distance from C to $\overline{AB}$.

   c.) Calculate the measure of angle B if the tower was not leaning. (Round to the nearest tenth).



7. The CN Tower in Toronto Canada is currently the world's tallest building. A surveying team wants to measure the height of the tower. The team moves a certain distance from the base of tower and measures the angle of elevation to be 68.5° Then the team moves back 350 ft. and calculates the angle of elevation to be 59.6° (As shown below)
Find the height of the tower in feet (Round to the nearest tenth).