Enrichment

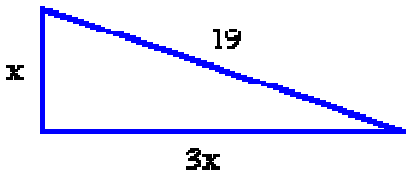
Objective: 1.02 and 2.02 Pythagorean Theorem Applications

1. Your house has a 14 ft high window. You want to use a ladder to go up to the window, and you decide to keep the ladder 6 ft away from the building to have a good slant. How long should the ladder be?

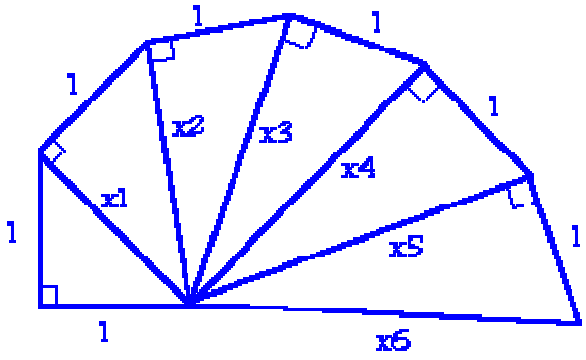
2. On a baseball diamond the bases are 90 ft apart. What is the distance from home plate to second base in a straight line?

3. An equilateral triangle has vertices at (0, 0) and (3, 0) in a coordinate plane. What are the coordinates of the third vertex?

4. Find out the length of sides a and b on the following triangle:



5. Look at the following figure. Start by finding the value for X_1, then for X_2, then X_3, and so on until you get the value for X_6. Write the lengths as square roots. What is the value of X_6?



Answers: 1. 15.23 2. 127.28 3. (1.5, 2.6) or (1.5, $\frac{3\sqrt{3}}{2}$) 4. 6.01 5. $\sqrt{7}$