1. The difference of the cubes of two consecutive integers is 217. Find these two integers.
2. Find four consecutive integers such that the sum of the squares of the first and fourth is 65.
3. The dimensions of a rectangular field are 8 yards and 7 yards. If each dimension is increased the same number of yards, he area of the new field exceeds the area of the original field by 54 square yards.
4. A missile is fired from ground level with an upward velocity of 4000 feet per second. After how many minutes will it return to the ground?
5. How much time will elapse before a missile fired with an upward velocity of 8000 feet per second from the edge of cliff 1800 feet high again reaches an altitude of 1800 feet?
6. The hypotenuse of a right triangle is 3 feet longer than one of the legs and 6 feet longer than the other. How long are the legs? (*HINT*: first find the length of the hypotenuse)
7. A rectangular field is 120 yards long and 80 yards wide. In order to double the area of the field, strips of equal width are added to one side and one end as in the diagram at the right. Find the width of these strips.
8. A rectangular recreational park with the dimensions 200 yards and 300 yards is t be built on a plot of land with an area of 81,600 square yards. If there is to be a uniform strip of land surrounding the park, how wide will this strip be?