**Name: Date:**

**CC Algebra Period:**

**DO NOW:** A middle school playground is 20 yards by 30 yards. If the school wishes to double the area of the playground, by what equal amount should both the length and width be increased?

1. In the two squares shown below, the larger square has a side length one foot greater than that of the smaller square. If the combined area of the two squares is 113 square feet, find a side length of the smaller square.
2. The product of two consecutive negative even integers is 24. Find the integers.
3. You are looking to put in a pool in your backyard. After comparing prices, you have found one company that has the best deal. The only issue is that this company has strict restrictions on the dimensions of the pool. The length of the rectangular swimming pool must be 3 ft. more than twice the width. The area can only be 65 m2. Find the length and the width of the pool that they will create. Round to the nearest tenths
4. The base of a trapezoid is four inches more than two times the length of the second base. The height of the trapezoid is two inches less than the second base. Given that the area of the trapezoid is 4 square inches, find the dimensions of the trapezoid.

**Area = ½ (base1 + base2)h**

1. The height, h, in meters of an object above the ground is given as

$ h\left(t\right)= -9t^{2}+6t+11$, where t is the time in seconds. How long will it take for the object to hit the ground? Leave your answer in simplest radical form.