

Measuring the Area of a Home Lawn

One of the most crucial steps any homeowner can take to properly manage their lawn is to measure its area. The proper application of fertilizer, lime and pesticides is based on knowing how much is needed per unit of area. If you don't know the size of your lawn it is very difficult to properly apply fertilizers and pesticides. This can lead to severe damage to the lawn and environment, not to mention the monetary loss by applying too much of an expensive product, or the loss of turfgrass due to the ineffectiveness of the application of too little of a product. It takes years of experience and a lot of luck to accurately guess the number of square feet in a given area.

The following is a short guide to accurately estimating the square footage of home lawns. First, make a sketch of your lawn. After measuring the area of your home lawn, make a more detailed sketch of each area and write down the square footage to keep for your records. It is quite easy to forget how many square feet are in different areas after a few months.

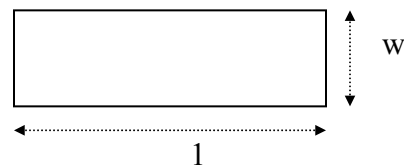
Geometric Shapes

The square footage of many lawns can be estimated by the use of geometric figures such as rectangles, circles, ovals or triangles. Some irregular shapes can be divided into smaller geometric shapes, and their areas added together to estimate the area of the entire lawn.

Rectangle

The area of a rectangle is found by multiplying the length (l) by the width (w).

$$\text{Area} = (l)(w)$$



Example 1:

Calculate the area of a rectangular lawn with a length of 50 ft and a width of 25 ft.

$$\text{Area} = (l)(w)$$

$$\text{Area} = (50 \text{ ft})(25 \text{ ft})$$

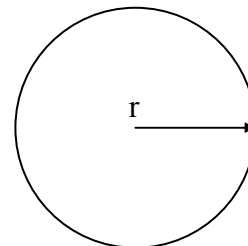
$$\text{Area} = 1,250 \text{ ft}^2$$

Circle

The area of a circle is the radius squared (r^2) multiplied by $\pi = 3.14$. The radius is equal to one-half the diameter of the circle.

$$\text{Area} = \pi r^2$$

$$\text{Area} = (3.14)r^2$$



Example 2:

Calculate the area of a circle with a radius of 30 ft.

$$\text{Area} = (3.14)r^2$$

Area = (3.14)(30 ft)² remember, square the radius first then multiply by 3.14

$$\text{Area} = 2,826 \text{ ft}^2$$

Ovals

The area of an oval is the length (l) multiplied by the width (w), multiplied by 0.8

$$\text{Area} = [(l)(w)](0.8)$$

Example 3:

Calculate the area of an oval with a length of 60 ft and a width of 30 ft.

$$\text{Area} = [(l)(w)](0.8)$$

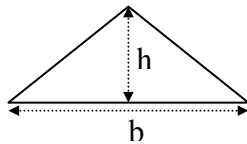
$$\text{Area} = [(60\text{ft})(30\text{ft})](0.8)$$

$$\text{Area} = 1,440 \text{ ft}^2$$

Triangles

The area of a triangle is one-half the base (b) multiplied by the height (h).

$$\text{Area} = \frac{[(b)(h)]}{2}$$

**Example 4:**

Calculate the area of a triangle where the base is 60 ft and the height is 30 ft.

$$\text{Area} = \frac{[(b)(h)]}{2}$$

$$\text{Area} = \frac{[(60\text{ft})(30\text{ft})]}{2}$$

$$\text{Area} = 900 \text{ ft}^2$$

Irregular Shapes

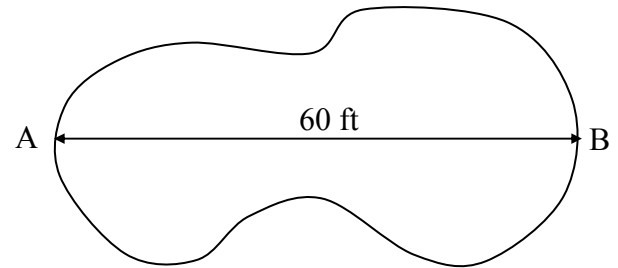
Geometric shapes are common in home lawns, but more often, lawns are irregularly shaped. Many of today's landscape designers use principles of flow and balance to break up straight lines. This gives the lawn a more natural and aesthetically pleasing appearance. In some ways, irregularly shaped areas are easier to measure than geometric shapes. There are two easy to understand methods for determining the area of irregular shapes. The offset method is

most often used to measure lawns of irregular shapes. Another is the average radius method.

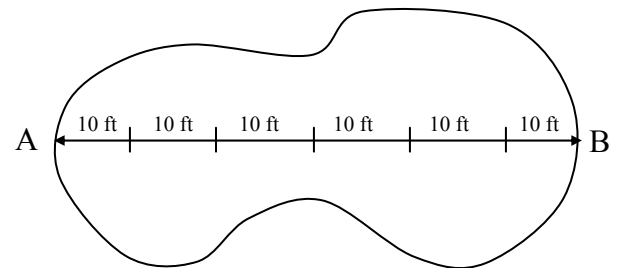
The Offset Method

The offset method simply divides the irregular shape into many smaller rectangles to estimate the area.

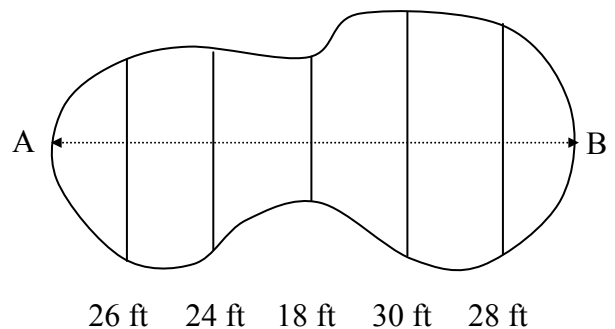
Step 1. Determine the longest line and label the ends A and B.



Step 2. Mark offset lines at right angles to the longest line. Choose the number of offset lines so that they divide the length line into equal parts. Tip: The closer the offset lines are to one another, the more accurate the estimation of the square footage.



Step 3. Measure the length from one edge of the lawn to the other at each offset line.



Step 4. Add the lengths of all of the offset lines and multiply by the distance between the offset lines.

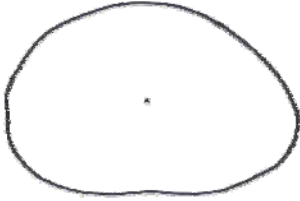
$$26+24+18+30+28 = 126 \text{ ft}$$

$$(126 \text{ ft})(10 \text{ ft}) = 1,260 \text{ ft}^2$$

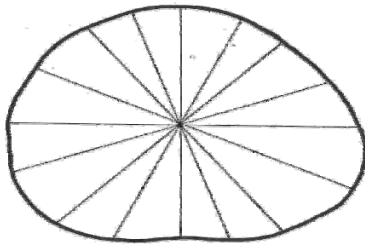
The Average Radius Method

Another way to determine the area of irregular circles is to measure the radius at 10 to 20 degree intervals and calculate the area from the average.

Step 1. Find the center or near center of the circular area.



Step 2. Record measurements, to the nearest foot, from the edge of the area to the center of the circle every 10 to 20 degrees.



Step 3. Average the measurements

Average radius = 17 ft

Step 4. Estimate the area using the formula for the area of a circle.

$$\text{Area} = \pi r^2$$

$$\text{Area} = (3.14)r^2$$

$$\text{Area} = (3.14)(17)^2$$

$$\text{Area} = 907 \text{ ft}^2$$

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