

Determining Approximate Raingarden Surface Areas

This guide will help an applicant to Nine Mile Creek Watershed District cost share grant program to approximate the surface area of a raingarden, as required by the application.

Step 1: Look at your raingarden. Find 1-3 shapes that make up the total shape of your raingarden.

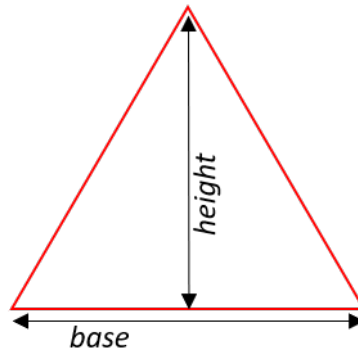
Step 2: Use the equations below to find your raingarden's approximate surface area.

Examples are available on pages 3-4

All arrows are in feet

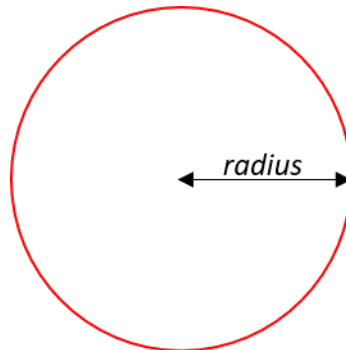
Triangle equation (good for all different triangles):

$$0.5 \times \text{base} \times \text{height} = \text{Triangle area}$$



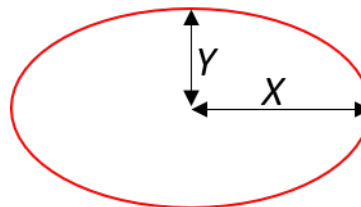
Circle equation:

$$3.14 \times \text{radius} \times \text{radius} = \text{Circle area}$$



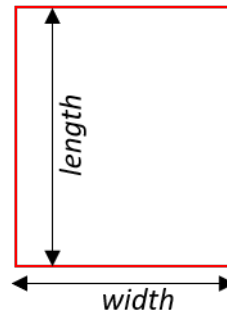
Oval equation:

$$3.14 \times X \times Y = \text{Oval area}$$



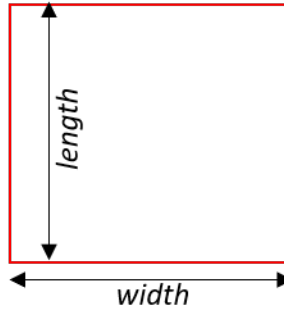
Rectangle equation:

$width \times length = \text{Rectangle area}$



Square equation:

$width \times length = \text{Square area}$



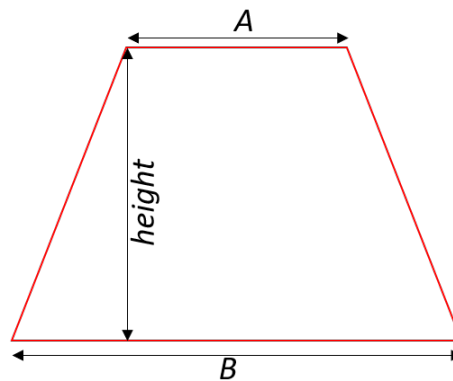
Trapezoid equation:

Perform these three equations in order

$$A + B = X$$

$$X \div 2 = Y$$

$Y \times height = \text{Trapezoid area}$



EXAMPLES

Example 1

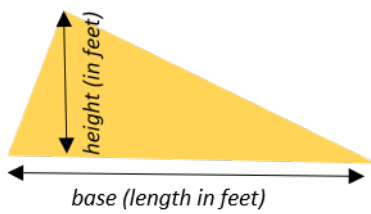
The raingarden is outlined:



The shape is like a triangle, as demonstrated in yellow below:



Use the equation and graphic below to find the area of the triangle:



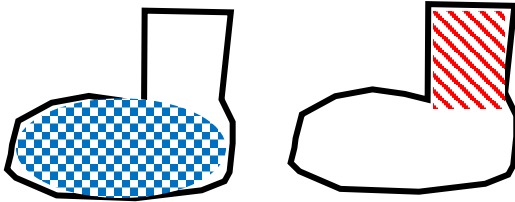
$$\text{Area} = 0.5 \times \text{base} \times \text{height}$$

Example 2

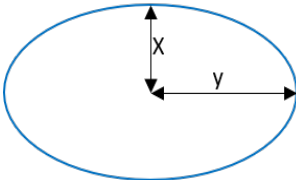
The raingarden's planned location is outlined:



Break the shape of the raingarden into pieces. The raingarden is approximately an oval and a rectangle. The two shapes are shown in the graphics below.

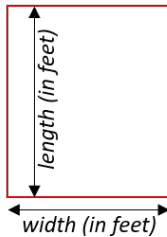


Find the area of the shapes:



$$3.14 \times X \times Y = \text{area of oval}$$

X and Y are length in feet



$$\text{width} \times \text{length} = \text{area of rectangle}$$

Add the area of the shapes together:

$$\text{area of oval} + \text{area of rectangle} = \text{surface area of raingarden}$$