# DrawCircle1

The equation of a circle residing at point with radius is

Using . We get:

As such:

Where . Simply put, we will loop over all possible values of in the range, and calculate the corresponding and values and draw at this point. However, , and as such, we need some sort of . What is the optimal value for ?

For now, we set , we will prove this later.

From this point on, we will consider the center point of the circle at We can simply translate the point before drawing.

# DrawCircle2

As a revision

We will calculate and calculate each from the previous one.

Similarly,

# Optimal step:

For a smooth circle, we want the distance between two consecutive points to be at most one pixel.

Using Taylor series:

We will use the approximation

We will use the upper limit of this equation as a value of .