

## COS 488: AC week 4 Q3

Dylan Mavrides

April 27, 2017

Here is my code to plot the first generating function:

```

    public class Example implements ComplexFunction
    {
        public Complex eval(Complex z)
        { //  $\{(1 \over 1-z) * (1 \over \ln(1-(1 \over (1-z))))\}$ 
        Complex one = new Complex(1, 0);
        // Complex d = ((one.minus(z).reciprocal()).log());
        Complex d = (z.times(z).times(z).times(z));
        d = d.times(z).times(z).times(z).times(z).times(z);
        d = d.times(z).minus((one.plus(one)).times(z)).plus(one);
        return d.reciprocal();
        }

        public static void main(String[] args)
        {
            Plot2Dez.show(new Example(), 512);
        }
    }

```

Here is my code to plot the second one:

```

        public class Example implements ComplexFunction
    {
        public Complex eval(Complex z)
        { //  $\{(1 \over 1-z) * (1 \over \ln(1-(1 \over (1-z))))\}$ 
        Complex one = new Complex(1, 0);
        Complex two = new Complex(2, 0);

        Complex[] Z = new Complex[11];
        Z[0] = one;
        for (int i = 1; i < 11; i++){
            Z[i] = Z[i-1].times(z);
        }

        Complex f = one.plus(Z[2]).plus(Z[4]).plus(Z[6]).plus(Z[8]);
    }

```

```

Complex g = Z[10].plus((one.minus(two.times(z)).times(f)));
g = g.reciprocal();
f = f.times(g);

return f;
}

public static void main(String[] args)
{
    Plot2Dez.show(new Example(), 512);
}
}

```

Here are the images, respectively:

