Note: It may takes 20-30 second to generate both DCT and DWT result. So it would be pretty slow for the progressive analysis because for each iteration, it generate new result.

P1

*xc* = X/(X+Y+Z) *yc* = Y/(X+Y+Z)

1- *xc - yc* = Z/(X+Y+Z)

[(1- *xc - yc*) / *yc* = [Z/(X+Y+Z)]/[ Y/(X+Y+Z)] = Z/Y

[(1- *xc - yc*) / *yc*] *Y* = Z/Y \* Y = Z

P2

1. p1 = a1(x1+y1+z1) p2= a2/(x2+y2+z2) p3 = a3/(x3+y3+z3)

2. C = p1(x1+x2+x3) + p2(y1+y2+y3) + p3(z1+z2+z3)

3. Since we have three color each expressed with its coordinate XYZ, and a color can be expressed by the combination of three different colors. Also, p(x, y, z) express the same as (px, py, pz). In this case, we are actually adding all the xyz coordination with different multiplication of primaries, as shown in the question above. Thus, any color C can be expressed as a linear combination of the respective primaries.

P3

1. 2 *x2*logx

2. 0.6

3. f’(x) = 4xlog(x)+2x f”(x) = 4log(x)+6

So x is 1/(e^-1/2) when entropy reaches the minimum.

4. From the chat above we can see the graph first reach its min and then goes up. To find the max x, we only need to compare the head or tail value. When f(0) = -0.02 and f(1) = 0. So the max x is 1.