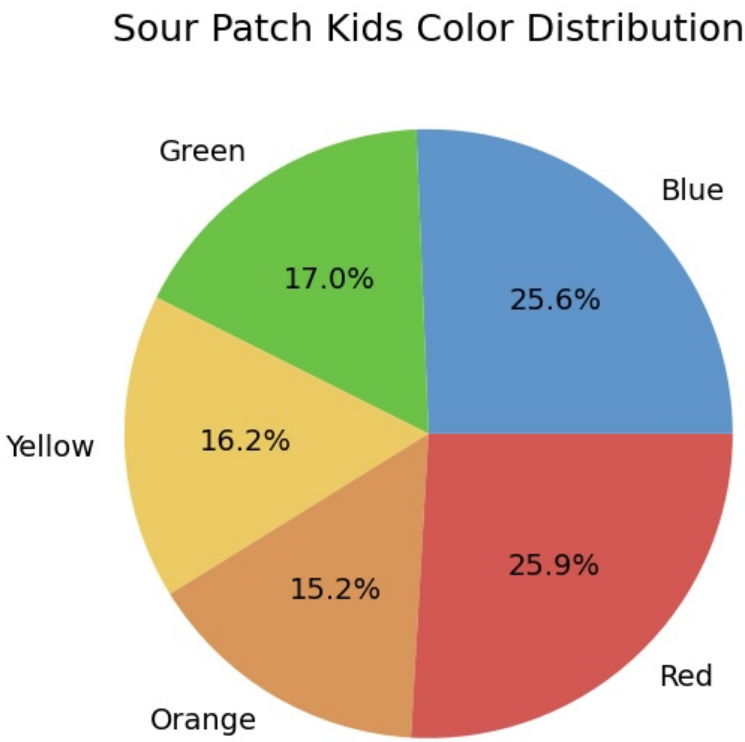


To prove that the distribution of Sour Patch Kids colors is not even 400 snack-sized packs were purchased, opened, and their colors recorded. With the resultant data a X^2 Test for Goodness of Fit can be conducted with the following hypotheses:

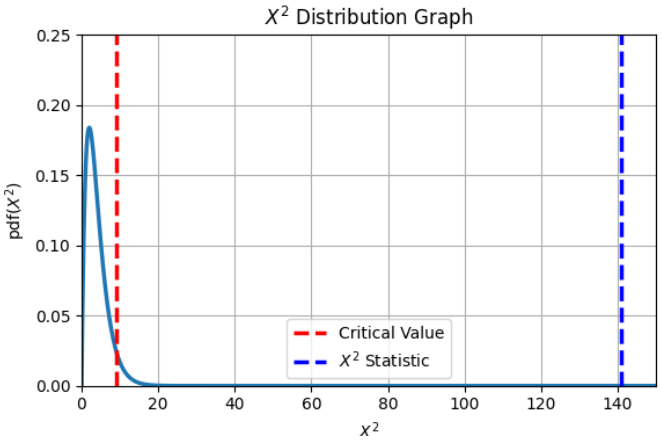
H_o: The distribution of Sour Patch Kids colors is equal
H_A: The distribution of Sour Patch Kids colors is not equal

Color	Observed	Expected	$O - E$	$(O - E)^2/\text{E}$
Red	646	498.4	147.6	43.71139647
Blue	639	498.4	140.6	39.66364366
Yellow	404	498.4	−94.4	17.87993579
Green	423	498.4	−75.4	11.40682183
Orange	380	498.4	−118.4	28.12712681
Total	2492		X^2 Statistic	140.7889

The critical value can be found with the following:

$df = 4$
$\alpha = 0.05$.
$X^2_{0.05,4} = 9.02$
$140.7889 > 9.02$; $X^2 > X^2_{0.05,4}$

$X^2 > X^2_{0.05,4}$; Therefore there is sufficient evidence to reject H_o



Any X^2 value to the right of the Critical Value would show there is significant evidence to reject the H_o

With the results of the X^2 Test for Goodness of Fit, it is clear that there is significant evidence that the distribution of Sour Patch Kids is not equal. From the data of 400 packs and 2492 individual candies, it is clear there are a greater number of Red and Blue Sour Patch Kids than Green, Orange, and Yellow, with approximate distributions closer to 1/2 Blue and Red, and 1/6 Green, Orange, and Yellow.