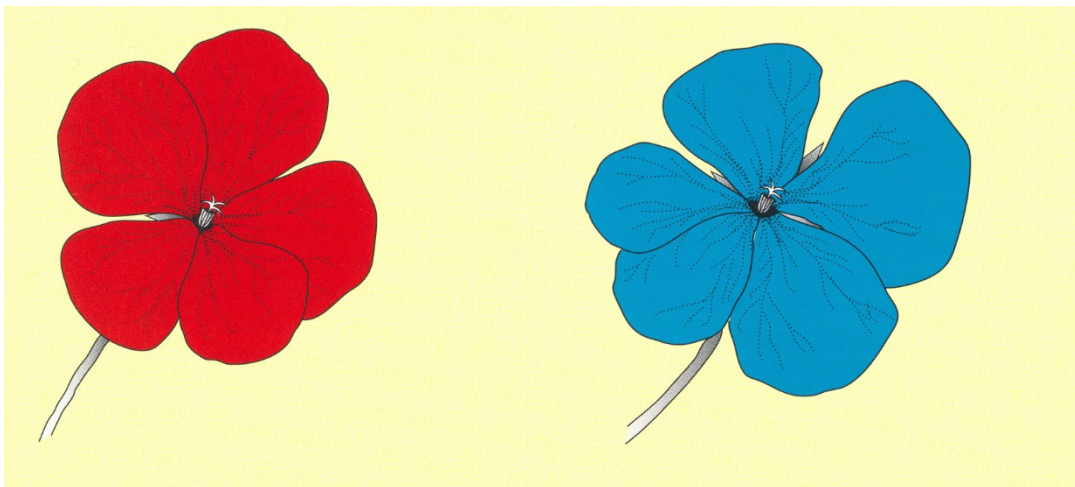


Week 1

1. A bright lighthouse is not visible in the day, but is easily visible at night even though the power of the light remains unchanged. Why?
2. The image of your TV looks washed out. The technician says that the intensity response curve of the TV is linear and hence the problem. To correct the problem, he has to make it non-linear. Why? What kind of non-linear response do you think he will put in?
3. We know that the color of a light/object we see depends on the selective transmission or reflections of some wavelengths more than others. Based on this fact, explain why sunsets and sunrises in polluted areas are found to be much more spectacular than other area.

Hint: Sunlight passes through the environment before reaching the eye.

4. Why do we see better in the dark if we avert/skew our gaze a little?



5. Do the following experiment. Look at the above picture. Then cover your left eye with hand for 10 minutes. So, now you are looking at the image with **just** your right eye. After 10 minutes, uncover your left eye and cover your right eye. Compare what you see with what you were seeing with your right eye before. You will see that the blue flower looks brighter from your left eye than from your right eye. Why does this happen?
6. You are deeply focussed on your studies in a silent environment. You hear a whisper and you are immediately alert. The same whisper is not heard in the presence of a whirring noise of the fan. Which perceptual phenomenon can you assign this behavior to?
7. You are lifting a 10lbs rice bag in right hand and a 20 lb bag in the left hand. You are relatively ambidextrous. Yet you feel that the weight in the left hand in

much higher than 2 times the weight in the right hand. What does it tell you about the power law in terms of perception of heaviness?