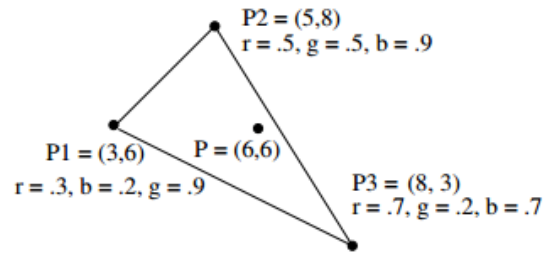


4. **Interpolation** (4 pts)

Find the barycentric coordinates for P, and use them to interpolate the (r, g, b) color component at that point. Show your work.



5. **Local Illumination** (18 pts)

- a) (16 pts) Sketch the illumination that would be computed for the above scene using the Phong illumination model. The scene is lit from above using a directional light source that is coming directly from above. Use 4 sketches: one for ambient, one for diffuse, one for specular and one for the total illumination. The Phong illumination model is given by:

$$I = I_d k_d (\mathbf{n} \cdot \mathbf{l}) + I_s k_s (\mathbf{r} \cdot \mathbf{v})^n + I_a k_a$$

where  $I_d = I_a = I_s = 1.0$ ,  $k_a = 0.2$ ,  $k_d = 0.8$ ,  $k_s = 0.7$ ,  $n = 100$ .

