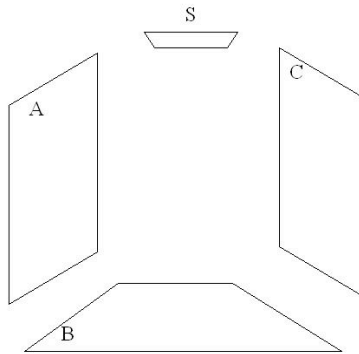


# 3080/GV10 Exercise

1) Apply three iteration steps of the progressive radiosity algorithm to the following scene configuration, with polygons A, B, C and a light source S. The parameters of the scene are given by

- Reflectances:  $\rho_A(0.1, 0.2, 0.1)$ ,  $\rho_B(0.2, 0.1, 0.1)$ ,  $\rho_C(0.1, 0.1, 0.5)$
- Light source intensity:  $E_S = (10,10,10)$
- Form factors:  $F_{AB} = F_{CB} = F_{BA} = F_{BC} = 0.01$ ,  $F_{AC} = F_{CA} = 0.05$ ,  $F_{SA} = F_{SB} = 0.01$  and  $F_{BS} = F_{AS} = 0.001$ ,  $F_{SC} = 0.005$ ,  $F_{CS}=0.0005$
- Areas:  $a_A = a_B = a_C = 1$ ,  $a_S = 0.1$



2) Explain each parameter of the radiosity equation:  $B_i = E_i + \rho_i \sum_j B_j F_{ij}$  and give the unit when applicable.

3) Transform the equation in 2 to the equation used for the progressive refinement radiosity method (shooting). Explain how it works.