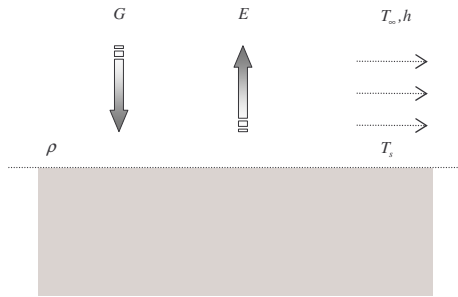
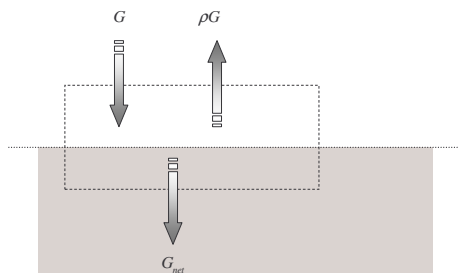


12.67



a $\alpha = 1 - \rho$

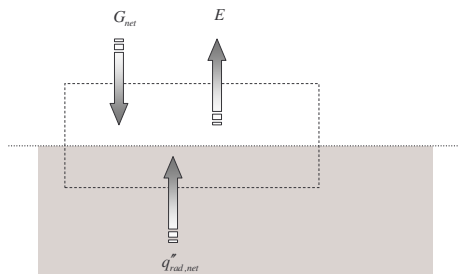
$\alpha = 1 - 0.4 = 0.6$



b $G_{net} = G - \rho G = (1 - \rho)G = \alpha G$

$G_{net} = (0.6)(1380) = 828 \left[\frac{W}{m^2} \right]$
to the surface

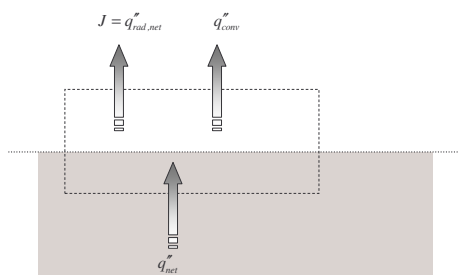
$G_{net} = \alpha G$



$q_{rad,net}'' = E - G_{net}$ $q_{rad,net}'' = 628 - 828 = -200 \left[\frac{W}{m^2} \right]$
to the surface

$q_{rad,net}'' = J^{radiosity} = E - \alpha G$

$J^{radiosity} = E - \alpha G$



c $q_{net}'' = q_{rad,net}'' + q_{conv}'' = q_{rad,net}'' + h(T_s - T_\infty)$

$q_{net}'' = (-200) + (28)(77 - 27) = 1200 \left[\frac{W}{m^2} \right]$
from the surface