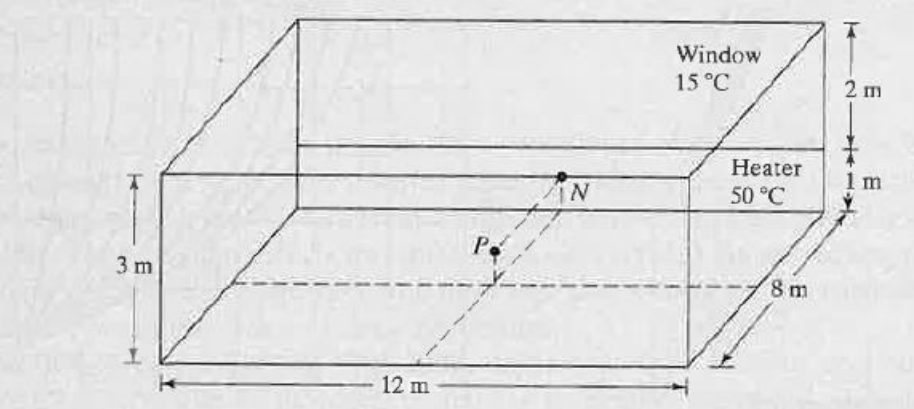
Compute the mean radiant temperature 0.5 m above the floor in the center of an empty room with dimensions 12 m long, 8 m wide, 3 m high. Along the long wall there is a radiator up to 1m from the floor with a temperature of 50 °C and the top prt is covered with a window with a surface temperature of 15 °C. The remaining surfaces are at 20 °C.



$$F_{P-j} \approx \frac{1}{4\pi}\left[\frac{X}{\sqrt{1+X^2}}\tan^{-1}\left(\frac{Y}{\sqrt{1+X^2}}\right)+\frac{Y}{\sqrt{1+Y^2}}\tan^{-1}\left(\frac{X}{\sqrt{1+Y^2}}\right)\right]$$

$$X = \frac{a}{1.8\ c} \qquad Y = \frac{b}{1.8\ c}$$