1) Given:
$I = 3.0 \times 10^{-3}\ W/m^2$
$r = 4.0\ m$
$P = ?$

Soln: $I = \frac{P}{4\pi r^2}$

$P = I\,4\pi r^2$
$= (3.0 \times 10^{-3}\ w/m^2)\,4\pi\,(4.0\ m)^2$

$\boxed{P = .60\ w}$

2) Given:
$r = 8.0\ km = 8.0 \times 10^3\ m$
$I = 1.0 \times 10^{-12}\ w/m^2$
$P = ?$

$P = I\,4\pi r^2$
$= (1.0 \times 10^{-12}\ w/m^2)(4\pi)(8.0 \times 10^3\ m)^2$

$\boxed{P = 8.0 \times 10^{-4}\ w}$

3) Given:
$I = 1.0 \times 10^{-12}\ w/m^2$
$P = 2.0 \times 10^{-6}\ W$
$r = ?$

$I = \frac{P}{\pi 4 r^2}$

$r^2 = \frac{P}{\pi 4 I}$

$r = \sqrt{\frac{2.0 \times 10^{-6}\ w}{4\pi\,(1.0 \times 10^{-12}\ w/m^2)}}$

$\boxed{r = 4.0 \times 10^2\ m \text{ or } 400\ m}$

4) Given:
$P = 3.0 \times 10^{-4}\ W$
$I = 1.1 \times 10^{-13}\ W/m^2$
$r = ?$

$r = \sqrt{\frac{P}{4\pi I}}$

$= \sqrt{\frac{3.0 \times 10^{-4}\ W}{4\pi\,(1.1 \times 10^{-13}\ w/m^2}}$

$\boxed{r = 1.5 \times 10^4\ m}$

5) Given:

$P = 1.0 \times 10^{-4}\ W$
$r = 2.5\ m$
$I = ?$

Soln:

$$I = \frac{P}{4\pi r^2}$$

$$= \frac{1.0 \times 10^{-4}\ \omega}{4\pi (2.5\ m)^2}$$

$$\boxed{I = 1.3 \times 10^{-6}\ \omega/m^2}$$

6) Given:

$I = 2.5 \times 10^{-6}\ \omega/m^2$
$r = 2.5\ m$
$P = ?$

$$I = \frac{P}{4\pi r^2}$$

$$P = 4\pi r^2 I$$

$$= 4\pi (2.5m)^2 (2.5 \times 10^{-6}\ \omega/m^2)$$

$$\boxed{P = 2.0 \times 10^{-4}\ W}$$