## <u>Quiz 24.1C</u>

The Sun radiates power at a rate of  $4.00 \times 10^{26}$  Watts. That energy is spread uniformly over all space, and the planet Mars receives some fraction of that energy.

- Assuming Mars is at a distance of 138 million miles from the Sun, calculate the <u>intensity of light</u> from the Sun at this distance. Answer with 3 SF, and show all work.
- b) What is the rms value of the electric field of light from the Sun, as seen from Mars?
- c) Suppose we design an orbiting solar panel for Mars that can collect the Sun's energy with 100% efficiency. This circular array of solar panels has a radius of 25.0 km. How much <u>energy (in Joules)</u> would this array collect in 1.00 hour?