32-7.

$$\begin{aligned}
\omega &= 2\pi f = 2\pi \cdot 6.1 \times 10^{14} = 3.83 \times 10^{15} \text{ rad/sec} \\
k &= \omega/c = 1.28 \times 10^{7} \text{ rad/m} \\
B_0 &= 5.8 \times 10^{-4} \text{ T} \\
E_0 &= cB_0 = 1.74 \times 10^{5} \text{ V/m} \\
\vec{\mathbf{B}} &= B_0 \hat{\mathbf{j}} \cos(kz - \omega t) \\
\vec{\mathbf{E}} &= E_0 \hat{\mathbf{i}} \cos(kz - \omega t)
\end{aligned}$$

32-9.

$$\begin{aligned}
\omega &= 2.65 \times 10^{12} \text{ rad/sec} \\
k &= \omega/c = 8840 \text{ rad/m} \\
E_0 &= 3.1 \times 10^{5} \text{ V/m} \\
B_0 &= E_0/c = 1.03 \times 10^{-3} \text{ T} \\
\vec{\mathbf{B}} &= -B_0 \hat{\mathbf{i}} \sin(ky - \omega t)
\end{aligned}$$

(a) Argument $(ky - \omega t)$ says moving in positive y direction.
(b)

$$\lambda = 2\pi/k = 7.11 \times 10^{-4} \text{ m}$$

(c) see above; Note $\vec{\mathbf{E}} \times \vec{\mathbf{B}}$ must be in $+\hat{\mathbf{j}}$ direction.

32-11. (a)

$$\lambda = c/f = c/8.3 \times 10^{5} = 361 \text{ m}$$

(b)

$$k = 2\pi/\lambda = 0.0174 \text{ rad/m}$$

(c)

$$\omega = 2\pi f = 5.22 \times 10^{6} \text{ rad/s}$$

(d)

$$E_0 = cB_0 = c \cdot 4.82 \times 10^{-11} = 0.0145 \text{ V/m}$$

32-13. (a)

$$\lambda = v/f = 2.17 \times 10^{8}/5.7 \times 10^{14} = 381 \text{ nm}$$

(b)

$$\lambda = c/f = c/5.7 \times 10^{14} = 526 \text{ nm}$$

(c)

$$n = c/v = c/2.17 \times 10^{8} = 1.38$$

(d)

$$K = n^2 = 1.91$$