62. We use $B(x,\,y,\,z) = (\mu_0/4\pi)i\,\Delta\vec{s}\times\vec{r}/r^3$, where $\Delta\vec{s} = \Delta s\hat{\jmath}$ and $\vec{r} = x\hat{\imath} + y\hat{\jmath} + z\vec{k}$. Thus,

$$\vec{B}(x,\,y,\,z) = \left(\frac{\mu_0}{4\pi}\right)\frac{i\,\Delta s\hat{\jmath}\times(x\vec{i}+y\hat{\jmath}+z\vec{k})}{(x^2+y^2+z^2)^{3/2}} = \frac{\mu_0 i\,\Delta s\,(z\hat{\imath}-x\hat{\mathrm{k}})}{4\pi(x^2+y^s+z^2)^{3/2}}\ .$$

(a) The field on the z axis (at $z = 5.0$ m) is

$$\begin{aligned}\vec{B}(0,\,0,\,5.0\,\mathrm{m}) &= \frac{(4\pi\times10^{-7}\,\mathrm{T\cdot m/A})(2.0\,\mathrm{A})(3.0\times10^{-2}\,\mathrm{m})(5.0\,\mathrm{m})\hat{\imath}}{4\pi\left(0^2+0^2+(5.0\,\mathrm{m})^2\right)^{3/2}}\\ &= 2.4\times10^{-10}\ \mathrm{T}\ \hat{\imath}\ .\end{aligned}$$

(b) $\vec{B}(0,\,6.0\,\mathrm{m},\,0)$, since $x = z = 0$.

(c) The field in the xy plane, at $(x, y) = (7, 7)$, is

$$\begin{aligned}\vec{B}(7.0\,\mathrm{m},\,7.0\,\mathrm{m},\,0) &= \frac{(4\pi\times10^{-7}\,\mathrm{T\cdot m/A})(2.0\,\mathrm{A})(3.0\times10^{-2}\,\mathrm{m})(-7.0\,\mathrm{m})\hat{\mathrm{k}}}{4\pi\left((7.0\,\mathrm{m})^2+(7.0\,\mathrm{m})^2+0^2\right)^{3/2}}\\ &= 4.3\times10^{-11}\ \mathrm{T}\ \hat{\mathrm{k}}\ .\end{aligned}$$

(d) The field in the xy plane, at $(x, y) = (-3, -4)$, is

$$\begin{aligned}\vec{B}(-3.0\,\mathrm{m},\,-4.0\,\mathrm{m},\,0) &= \frac{(4\pi\times10^{-7}\,\mathrm{T\cdot m/A})(2.0\,\mathrm{A})(3.0\times10^{-2}\,\mathrm{m})(3.0\,\mathrm{m})\hat{\mathrm{k}}}{4\pi\left((-3.0\,\mathrm{m})^2+(-4.0\,\mathrm{m})^2+0^2\right)^{3/2}}\\ &= 1.4\times10^{-10}\ \mathrm{T}\ \hat{\mathrm{k}}\ .\end{aligned}$$