The following is a list of corrections for Engineering Electromagnetics.
Some of the corrections are minor (misspellings, missing characters, etc.) but some are more substantive.
It is recommended that the corrections for each chapter be inserted in the text before study of a particular chapter begins.
Please note that corrections are listed by page number. Therefore, all corrections to the answers at the end of the book appear towards the end of this list, grouped by chapter number.

Chapter 1

Page 4, in Eq. (1.4)
Change: $\hat{\mathbf{y}}v_x$ to: $\hat{\mathbf{y}}v_y$

Page 6, last relation in Example 1.1.
Change: $-\hat{\mathbf{z}}\frac{1}{\sqrt{9x^2+12x+30}}$ to: $+\hat{\mathbf{z}}\frac{1}{\sqrt{9x^2+12x+30}}$

Page 14, 10th line above Exercise 1.3.
Change: **B.B** + **B.B** − 2**B.A** to: **B.B** + **A.A** − 2**B.A**

Page 33, 4th line from bottom of page (expression)
Change: $...=\frac{-1+8+1}{\sqrt{6}}=\frac{8}{\sqrt{6}}$
To: $...=\frac{-1+8+2}{\sqrt{6}}=\frac{9}{\sqrt{6}}$

Page 33, 3rd line from bottom of page (expression)
Change: ....equals $\frac{8}{\sqrt{6}}$
To: ....equals $\frac{9}{\sqrt{6}}$

Page 34, first expression at top of page:
Change: $=\frac{(\hat{\mathbf{x}}2-\hat{\mathbf{y}}2-\hat{\mathbf{z}}1)(2-4+1))}{4+4+1}=\frac{-\hat{\mathbf{x}}2+\hat{\mathbf{y}}2+\hat{\mathbf{z}}1}{9}$
To: $=\frac{(\hat{\mathbf{x}}2-\hat{\mathbf{y}}2-\hat{\mathbf{z}}1)(2-4-1))}{4+4+1}=\frac{-\hat{\mathbf{x}}2+\hat{\mathbf{y}}2+\hat{\mathbf{z}}1}{3}$

Page 34, 2nd line from top of page:
Change: ....$-\hat{\mathbf{x}}2/9, \hat{\mathbf{y}}2/9$ and $\hat{\mathbf{z}}1/9$.
To: ...$-\hat{\mathbf{x}}2/3, \hat{\mathbf{y}}2/3$ and $\hat{\mathbf{z}}1/3$.

Page 43, second line below Eq. (1.94)
Change: **(1.93)** to: **(1.94)**

Page 44, 5th line from top of page:
Change: $=R_2^2 sin\theta_2 cos^2\varphi_2.....$ To: $=R_2^2 sin^2\theta_2 cos^2\varphi_2.....$

Page 44, fourth line above Example 1.18
Change: ...$cos\varphi_2 - \varphi_1$.... To: ...$cos(\varphi_2 - \varphi_1)$....

Chapter 2

Page 68, first expression above Example 2.5

Change: $...= 1 + 0 + \frac{1}{2} + 0 + \frac{1}{2} - \frac{1}{2} = 1\frac{1}{2}$

To: $...= 1 + 0 - \frac{1}{2} + 0 + \frac{1}{2} - \frac{1}{2} = \frac{1}{2}$

Page 69, second line of caption to Figure 2.9

Change: ds_1 to: $d\mathbf{s}_1$

Change: ds_2 to: $d\mathbf{s}_2$

Page 69, first line above exercise 2.2

Add equal sign before the second integral sign in the expression. The correct form is:

$$= \int_{r=0}^{r=1} 5rz\Big|_{z=-3}^{z=+3} dr = ...$$

Page 72, fourth line in example 2.7

Change: ....of radius *a* and height *h*... To: ....of radius *a* and height *b*...

Page 86, second line under Eq. (2.52)

Change: ....flux of vector out of..... to: ....flux of vector **A** out of.....

Page 92, second row in example 2.15

Change: R^5 to: R^3

Page 93, Eq. (2.80)

Change: A to: Az

Page 94, first line below Eq. (2.83)

Change: **(2.77)** to: **(2.51)**

Page 103, in example 2.18, second and third relation from the bottom:

Move the term $v_0(d + x)$ from under $\hat{\mathbf{x}}$ column to under the $\hat{\mathbf{y}}$ column (in third relation from the bottom of the page)

Move the term $v_0(d - x)$ from under $\hat{\mathbf{x}}$ column to under the $\hat{\mathbf{y}}$ column (in second relation from the bottom of the page)

Move the term 0 from under the $\hat{\mathbf{y}}$ column to under the $\hat{\mathbf{x}}$ column (in both relations). The matrix in each of these two relations should look as follows:

$$\times\mathbf{v} = \begin{vmatrix} \hat{\mathbf{x}} & \hat{\mathbf{y}} & \hat{\mathbf{z}} \\ \partial/\partial x & \partial/\partial y & \partial/\partial z \\ 0 & v_0(d+x) & 0 \end{vmatrix} = \hat{\mathbf{z}}\left(\frac{\partial(v_0(d+x))}{\partial x}\right) = \hat{\mathbf{z}}v_0$$

$$\times\mathbf{v} = \begin{vmatrix} \hat{\mathbf{x}} & \hat{\mathbf{y}} & \hat{\mathbf{z}} \\ \partial/\partial x & \partial/\partial y & \partial/\partial z \\ 0 & v_0(d-x) & 0 \end{vmatrix} = \hat{\mathbf{z}}\left(\frac{\partial(v_0(d-x))}{\partial x}\right) = -\hat{\mathbf{z}}v_0$$

Page 107, first line from top of page
Change: $ds =$ to: $d\mathbf{s} =$

Page 110, 7th line from bottom of page
Change: ....four types of field that...
To: ....four types of fields that...

Page 111, third line under 2.5.2
Change: .....scalar function V
To: .....scalar function U

Page 111, first line below Eq. (2.130)
Change: .....divergence of the $\Delta U(x,y,z)$.....
To: .....divergence of $U(x,y,z)$.....

Page 114, question 33, parts (c) and (d)
The subscript φ should be changed to normal letter (not a subscript). The correct forms are:
(c) $\nabla \cdot \oint \varphi = 0$ and **(d)** $\nabla \times \oint \varphi = 0$

Page 119, problem 2.37(5).
Change: $\mathbf{E}=\mathbf{R}k$ to: $\mathbf{E}=\hat{\mathbf{R}}k$

Chapter 3

Page 126, third line of footnote No. 6
Change: ....work by (1733-1804)...
To: ....work by Joseph Priestley (1733-1804)...

Page 136, Figure 3.8
Invert the lower four arrows!!!!

First formula on p.147:
Change integral limit from: n/2
To: π/2

Page 148, Eq. (3.34)
Change: $-x_0$ to: x_1 (3 locations)
Change: $+x_0$ to: x_2 (3 locations)
Change: $-y_0$ to: y_1 (3 locations)
Change: $+y_0$ to: y_2 (3 locations)

Page 149, Eq. (3.35)
Change: $-x_0$ to: x_1 (3 locations)
Change: $+x_0$ to: x_2 (3 locations)
Change: $-y_0$ to: y_1 (3 locations)
Change: $+y_0$ to: y_2 (3 locations)

Page 152, 4th line from bottom of page:
Change: $|\mathbf{r} - \mathbf{r}'| = (x...$
To: $|\mathbf{r} - \mathbf{r}'| = ((x...$

Page 155, 4th line from top of page
Change: [2a −
To: [2a +

Page 155, 8th line from top of page
Change: 17,827.7
To: 17,799.53

Page 155, 12th line from top of page
Change: 49,598
To: 49,520

Page 166, First line in problem 3.2.
Change: p=1.6.... to: q=1.6.....

Page 169, problem 3.11(a), second line:
Change: distance between.... To: distance h between....

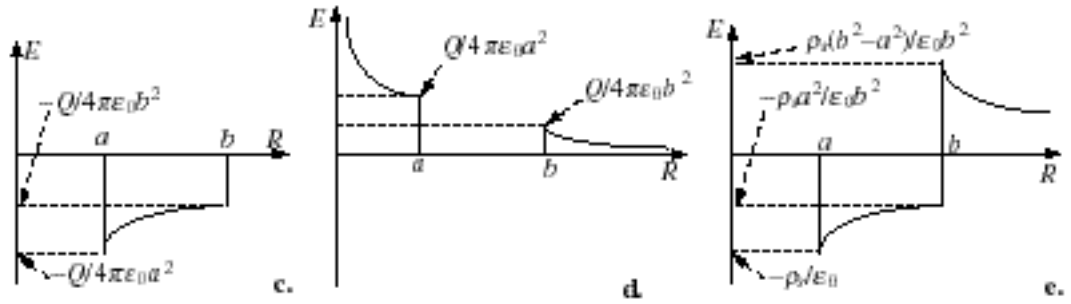
Page 169, problem 3.14, second line:
Change: .....equilateral triangle.
to: .....equilateral triangle with sides of length L.

Chapter 4

Page 177, first equation from top:
Change ∂_y to ∂A_y in the second partial derivative.

Page 182, Figure 4.4c.
Change b^2 to: a^2 and vice versa.

Page 182, Figure 4.4c.
Interchange between the electric fields marked!. See Figure c. (attached) for correct form. Note that Figures d and e are not changed.



Page 184, 4th line of text (excluding expressions) from bottom of page
Change: E_S
To: E

Page 185, Figure 4.6a
Change 10mm to 10 m (also make 10 m nonitalic!)

Page 187, first expression above section 4.3.1.2
Change: 4.494
To: 44.94

Page 192, second line from top of page
Change: *path (2)*
To: *path* (1)
Note: (1) is not italic!!

Page 195, Figure 4.12
Change: *a* (the vertical dimension)
To: *b*

Page 195, First line in Exercise 4.3
Change: 10^7
To: 10^{-7}

Page 196, in Eq. (4.31)
Change: *r* (in the integral!)
To: *l'*

Page 201, 7th line of text from top of page
Change: $P(x,y)$
To: $P(x,0)$

Page 201, third expression from top of page
Change: $-\hat{\mathbf{r}}_B$
To: $\hat{\mathbf{r}}_B$

Page 205, third expression from bottom of page
Change: $\left[1 + \frac{d}{2R}\cos\theta\right]$
To: $\left[1 - \frac{d}{2R}\cos\theta\right]$

Page 205, last expression on the page
Change: $\approx$
To: $=$

Page 206, first expression on the page
Change: $\approx$
To: $=$

Page 214, Eq. (4.41)
Change: v
To: v'
Change: dv
To: dv'

page 214, Eq. (4.47)
Change: $\mathbf{R}$
To: $\mathbf{P}$
(Note: change only the vector **R**!!)

Page 215, Eq. (4.42), first relation.
Change $[C^2/m]$
To: $[C/m^2]$

Page 226, Eq. (4.79)
Change: $\frac{D_{2n/\varepsilon_2}}{D_{1n/\varepsilon_1}}$
To: $\frac{D_{2n}/\varepsilon_2}{D_{1n}/\varepsilon_1}$
(Note: $\varepsilon_1, \varepsilon_2$ are not in the index!!)

Page 229, first expression above Example 4.19
Change: $0.04°$
To: $0.413°$
Change: 69,280
To: 69,281

Page 229, first line above Example 4.19
Change: $0.04°$

To: 0.413°

Page 234, Figure 4.37
Change: *area s*
To: *area A*

Page 239 first line below Figure 4.40:
Change: ...combination of serial...
To: ...combination of series...

Page 243, Figure 4.43
Change: *s* (on the lower surface of the Gaussian surface)
To: s_1

Page 248, line 6 above Eq. (4.113)
Change: 1.6×10^{19}
To: 1.6×10^{-19}

Page 249. Eq. (4.118).
Change: ρ_i to: ρ_l.

Page 249. first line below Eq. (4.118).
Change *V'* to *V*.

Page 251, First expression from bottom of page
Change: (10^{-9})
To: (10×10^{-9})

Page 251, 3rd line from bottom of page
Change: trillion
To: billion

Page 251, second line from bottom
Change: **Note.** Part of this every.....
To: **Note**. Part of this energy.....

Page 253, Eq. (4.128)
Change: $\frac{\mathbf{D}.\ V}{2}$
To: $\frac{\mathbf{D}.(-\ V)}{2}$

Page 263 8th line from top
Change: ...continuous current (as low...
To: ...continuous current, as low...

Page 268, problem 4.2.
Change: $|x|$ to: x
(that is, remove the absolute value)

Page 268, problem 4.5.
Add: Permittivity is ε_0 everywhere.

Page 269, problem 4.7.
Assume all radii are given in [mm] or, alternatively, that all radii are in [m] and the charge density is given in [C/m^3]. Either way the result shown on page 1204 will be obtained.

Page 270, Problem 4.9(c)
Remove: Compare with (a) by plotting the solutions in (a) and (b)

Page 271, problem 4.14
Change: The sphere has relative permittivity of ε_r.
To: The sphere has permittivity ε.

Page 272, Problem 4.22, first line of the problem
Change: ...Electric field of parallel....
To: ...Electric field and potential of parallel...

Page 272, Problem 4.22, third line of the problem
Change: ...electric field intensity....
To: ...electric field intensity and potential...

Page 272. Problem 4.23, second line from bottom of page
Change: ....zero potential in free space.
To: .....zero potential. Permittivity between the plates is ε, outside the plates ε_0.

Page 272. Problem 4.23, last line on the page
Change: .....everywhere in space.
To: .....everywhere.

Chapter 5

Page 287, Eq. (5.9)
Place a negative sign after the equal sign!!!

Page 288, second expression from bottom of page
Change: $C_l d$
To: $C_1 d$

Page 290, second expression from bottom of page
Change: $V(\pi) = a\pi + V_0$ To: $V(\pi) = a\pi + V_0 = 0$

Page 291, first expression from top of page
Change: $= \varphi \frac{V_0}{\pi r}$
To: $= \hat{\varphi} \frac{V_0}{\pi r}$

Page 296, Eq. (5.18)
Left square bracket missing in the first expression, denominator:
$x^2+y^2+(z-d)^2\big]^{3/2}$ should be changed to: $\big[x^2+y^2+(z-d)^2\big]^{3/2}$

Page 299, first expression from top of page
Change: $\hat{\mathbf{z}}\mathbf{z}$ (two locations!!)
To: $\hat{\mathbf{z}}z$

Page 299, third expression from top of page
Change: a^2
To: a^3

Page 307, third line below Eq. (5.23)
Change: $r_1 = \sqrt{x^2+(y+d)^2}$
to: $r_1 = \sqrt{x^2+(y-d)^2}$

Page 309, First expression from top of page
Change: r_2
To: r_1

Page 310, first expression from top of page
Change: $\hat{\mathbf{r}}_l$
To: $\hat{\mathbf{r}}_1$

Page 313, Title to Example 5.10
Change: **Paint charge.....**
To: **Point charge.....**

Page 317, in Figure 5.23b.
Interchange between r_{11} and r_{12}
Interchange between r_{22} and r_{21}

Page 317, second line above Eq. (5.28)

Change: R
To: r

Page 318, in Eq. (5.30)
Change: R
To: r

Page 318, in Eqs. (5.32), (5.34) and (5.36),
Change: $\frac{d-a}{a-b}$ (note: two occurences in **5.34**!!)
To: $\frac{a-b}{d-a}$

Page 318, in Eqs. (5.33) and (5.34),
Change: $\frac{a+d}{a+b}$ (note: two occurences in **5.34**!!)
To: $\frac{a+b}{a+d}$

Page 318, in Eq. (5.36),
Change: $\frac{d(d-a)}{da-a^2}$
To: $\frac{da-a^2}{d(d-a)}$
Change: $ln\frac{d}{a}$
To: $ln\frac{a}{d}$

Page 318, in Eq. (5.37)
Change: R (two locations)
To r

Page 318, first line below Eq. (5.37)
Change: R (two locations)
To r

Page 319, in Eq. (5.38)
Change: R (two locations)
To: r

Page 323, Figure 5.27
Change: $-Q$ To: $-2Q$

Page 329, Eq. (5.56)
Change: $\cos k_x x)$ To: $\cos(k_x x)$

Page 330, Eq. (5.59)
Change: $\sin h$ To: sinh
Change: $\cos h$ To: cosh

Page 335, second expression from bottom of page
Change: $\left[cos\left(\frac{(m-p)\pi x}{a}\right) + cos\left(\frac{(m+p)\pi x}{a}\right)\right]$

To: $\frac{1}{2}\left[\cos\left(\frac{(m-p)\pi x}{a}\right)-\cos\left(\frac{(m+p)\pi x}{a}\right)\right]$

Change: $\left[\cos\left(\frac{(n-q)\pi y}{b}\right)-\cos\left(\frac{(n+q)\pi y}{b}\right)\right]$

To: $\frac{1}{2}\left[\cos\left(\frac{(n-q)\pi y}{b}\right)-\cos\left(\frac{(n+q)\pi y}{b}\right)\right]$

Page 345, Problem 5.16 (b)

Change: .....left plate is at x=0....

To: .....upper plate is at x=0....

Page 346, third line of text from the top

Change: ......left plate.....

To: .....upper plate.....

Page 346, second line above Figure 5.41

Change: ......left plate.....

To: .....upper plate.....

Chapter 6

Page 354 fourth line under section 6.1.1 header:
Change: www.*****.***** To: http://www.springer-ny.com/supplements/nida

Page 356, Figure 6.3a
Change: $\rho(x,y,z)$
To: $\rho(x',y',z')$
Change: *ds* (Two locations!!)
To: *ds'*

Page 356, Figure 6.3b
Change: $\rho(x,y,z)$ To: $\rho(x',y',z')$
Change: $q_i(x_i,y_i,z_i)$ To: $q_i((x_i',y_i',z_i')$
Change: $q_j(x_j,y_j,z_j)$ To: $q_j((x_j',y_j',z_j')$
Change: $q_k(x_k,y_k,z_k)$ To: $q_k((x_k',y_k',z_k')$

Page 356, 4th line below section 6.3 subtitle
Change: ...there are a large number...
To: ...there is a large number...

Page 358, Eq. (6.9)
Change: Δy^2 To: $(\Delta y)^2$
Change: Δz^2 To: $(\Delta z)^2$

Page 363, 5th line above Eq. (6.18)
Add $-V_{12}$ to the equation. The correct form is: $4V_{11} - V_{10} - V_{12} - V_7 - V_{15} = 0$

Page 369, second line of text below Figure 6.13
Change: -2.5×10^{-6}....
To: -2.5×10^{-3}....

Page 369, second line above (b) in solution to Example 6.1
Change: **Eq. (5.12)**
To: **Eq. (5.11)**

Page 379, line 8 (excluding expressions) from top
Change: ...individual domain:
To: ...individual domains:

Page 384, 6th line from bottom of page
Change: m^2 (in two locations on the line)
To: m

Page 385, 7th expression from top of page, last term in square brackets
Change: $\frac{1}{7.5\sqrt{2}}$ To: $\frac{6.25}{7.5\sqrt{2}}$

Page 396, 4th line from bottom
Change: ...within element *i* and...
To: ...within element *m* and...

Page 400, Eq. (6.84), second matrix

Change:
$$-\begin{bmatrix} (\rho_0\Delta_1)/3 + (\rho_1\Delta_2)/3 - \left[s_{32}^{3} + s_{31}^{4}\right]V_0 - s_{13}^{1}V_0 \\ (\rho_0\Delta_1)/3 + (\rho_1\Delta_2)/3 - s_{23}^{1}V_0 \\ -s_{21}^{4}V_0 \\ (\rho_1\Delta_2)/3 - s_{12}^{3}V_0 \end{bmatrix}$$

To:
$$-\begin{bmatrix} (\rho_0\Delta_1)/3 + (\rho_1\Delta_2)/3 - s_{13}^{1}V_0 \\ (\rho_0\Delta_1)/3 + (\rho_1\Delta_2)/3 - \left[s_{32}^{3} + s_{31}^{4}\right]V_0 - s_{23}^{1}V_0 \\ -s_{21}^{4}V_0 \\ (\rho_1\Delta_2)/3 - s_{12}^{3}V_0 \end{bmatrix}$$

(Note the term that moved from first to second row!)

Page 404, 3rd line above Figure 6.36

Change: $V = 50$ V To: $V = 100$ V

Page 405, 12th and 11th line above Figure 6.37

Change: ...are 6.25 V, 12.5 V, 25 V, 37.5 V and 43.75 V, respectively.
To: ...are 12.5 V, 25 V, 50 V, 75 V and 87.5 V, respectively.

Page 405, Figure 6.37

Change: V=50V To: V=100V

Page 406, 2nd expression from bottom of page

Change: $\left[\frac{\text{V}}{\text{m}}\right]$ To: $\left[\frac{\text{V}}{\text{mm}}\right]$

Page 406, 3rd expression from bottom of page

Change: $\left[\frac{\text{V}}{\text{m}}\right]$ To: $\left[\frac{\text{V}}{\text{mm}}\right]$

Page 410, second line in problem 6.3.

Change: C/m To: C/m^3

Page 410, third line in problem 6.5.

Change: C/m^2 To: C/m^3

Page 410, fourth line in problem 6.6.

Change: C/m^2 To: C/m^3

Page 412, first line in problem 6.11.

Change: **Application:**
To: **Application: Coupled Charge Devices (CCD).**

Page 413, Figure 6.50

Change: 10^{-10} C/m To: 1 C/m^3.

Page 414, Figure 6.51.

Change: C/m^2 (two occurences)
To: C/m^3

Add: $\varepsilon=\varepsilon_0$

Chapter 7

Page 421, 1st line under Eq. (7.6)
Change: ...unit volume and (charge...
To: ...unit volume (charge...

Page 424, 5th expression from top of page
Change: 10^{-15}t To: 10^{15}t

Page 426, 3rd line under Table 7.1
Change: Siemens Conductivity... To: Conductivity...

Page 433, second relation from top:
Change: .....+ $R_1 = x/2\sigma wd$.....
to: ..... + $R_3 = x/2\sigma wd$.....
Change: σS To: σwd

Page 435, 6th line from top
Change: 5.7×10^{8} To: 5.7×10^{7}

Page 452, last expression on the page
Change: $\times10^{6}$ To: $\times10^{-6}$

Page 454, Caption to Figure 7.22
Change: **(b)** Potential drop method of prospecting for minerals. **(c)** The four probe method of testing and prospecting.
To: **(b)** The four probe method of testing and prospecting. **(c)** Potential drop method of prospecting for minerals.

Page 464, Problem 7.11
Change: $\sigma=\sigma+\sigma_0$... To: $\sigma=\sigma_0$...

Chapter 8

Page 476, 4th line below Eq. (8.5)
Change: ...amperes/meter...
To: ...ampere/meter...

Page 480, 6th line of text from top
Change: **R**
To: **r**

Page 483, 4th line above Eq. (8.10)
Change: *dx*
To: *dx'*

Page 489, 5th line from bottom
Change: ...either zero or is parallel to...
To: ...either perpendicular or parallel to...

Page 491, Figure 8.14
add to the figure: a=0.04 m, b=0.06 m.

Page 491, last relation on the page:

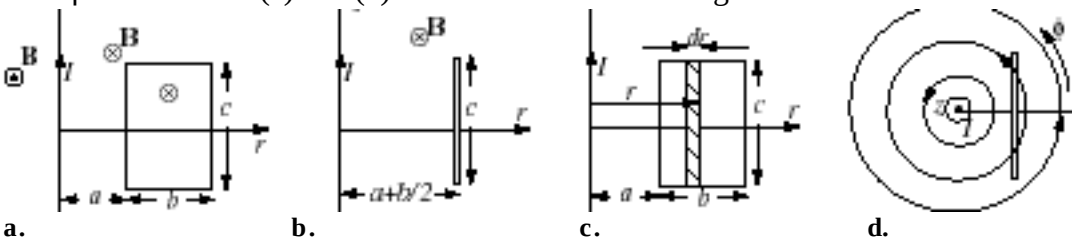
Change: $B_{av} = \frac{\mu_0 NI}{2\pi r}$.....

To: $B_{av} = \frac{\mu_0 NI}{4\pi}$.....

Page 495, 2nd line in Example 8.11
Change: ...in the *xz* plane.
To: ...in the φz plane.

Page 495, 5th line in Example 8.11
Change: ...is now parallel to the *yz* plane...
To: ...is now perpendicular to the *rz* plane...

Page 495, Figure 8.17.
Change the *x* coordinate to *r* coordinate. Remove the *y* coordinate from (a), (b), (c) and (d). Add φ coordinate to (c) and (d). See attached corrected figure



a. **b.** **c.** **d.**

Page 496, 5th line above section 8.6
Change: ...is now parallel to the *yz* plane...
To: ...is now perpendicular to the *rz* plane...

Page 499, 2nd line from top of page

Change: ...**Eqs. (8.23)**...
To: ...**Eq. (8.23)**...

Page 503, Eq. (8.44)
Change: $A(\mathbf{r})$
To: $\mathbf{A}(\mathbf{r})$ (that is, **A** is a vector).
Also: remove comma at end of equation

Page 503, Eq. (8.45)
Change: $A(\mathbf{r})$
To: $\mathbf{A(r)}$ (that is, **A** is a vector).

Page 506, First expression from top
Change: $\mathbf{R} = \hat{\mathbf{r}}h - \hat{\mathbf{z}}(z - z') \rightarrow R = \sqrt{h^2 + (z - z')^2}$
To: $\mathbf{R} = \hat{\mathbf{r}}r + \hat{\mathbf{z}}(z - z') \rightarrow R = \sqrt{r^2 + (z - z')^2}$

Page 506, 2nd expression from top
Change: $z'^2 + 2zz'$ (two locations in the expression)
To: $z'^2 - 2zz'$
Change: $+ 2z' + 2z$
To: $+ 2z' - 2z$

Page 508, 2nd expression from top, 7th term in the expression
Change: $(a - z)\sinh^{-1}\frac{2(a + z)}{a}$
To: $(a + z)\sinh^{-1}\frac{2(a + z)}{a}$

Page 508, 3rd expression from top, 4th term in the expression
Change: $-\frac{5a}{2}$
To: $-\frac{\sqrt{26}a}{2}$

Page 508, 2nd expression from bottom, 2nd term in the expression
Change: $-\frac{5a}{2}$
To: $-\frac{\sqrt{26}a}{2}$

Page 508, 1st expression from bottom, 2nd term in the expression
Change: $-\frac{5}{2}$
To: $-\frac{\sqrt{26}}{2}$

Page 508, 1st expression from bottom
Change: 2.1×10^{-7}
To: 1.98×10^{-7}

Chapter 9

Page 528, 2nd line from bottom
Change: ...**Eq. (8.35)**...
To: ...**Eq. (8.34)**...

Page 529, in Figure 9.1b
Mark the radius of the loop as *d*.

Page 532, first line under Eq. (9.15)
Change: $\hat{\varphi} m \sin\theta = \hat{\mathbf{z}}\mathbf{m}\times\hat{\mathbf{R}}$
To: $\hat{\varphi} m \sin\theta = \mathbf{m}\times\hat{\mathbf{R}}$

Page 534, Table on upper part of page, second row, first column
Change: 1.306×10^{-8}
To: 1.431×10^{-8}

Page 538, Eq. (9.23)
Change: M
To: $\mathbf{M}$ (that is, **M** is a vector).

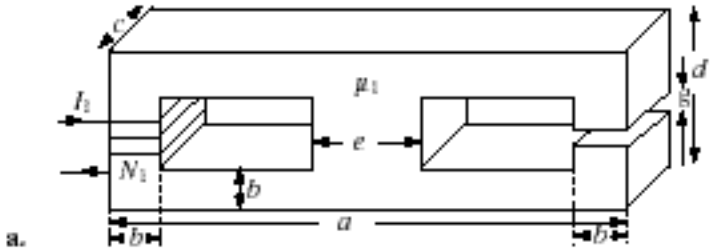
Page 541, 8th line in Example 9.4
Change: ...magnetic flux, density...
To: ...magnetic flux density...

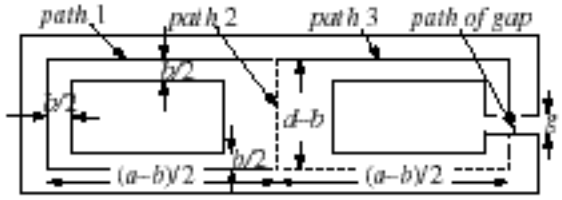
Page 574, Eq. (9.62)
Change: Second and third integrals, change limit of integral, from *t* to *I*

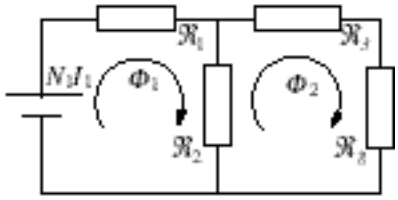
Page 584, 1st expression from bottom, 2nd term on RHS
Change: $\frac{\mu_0 n^2 I^2 \pi b^2}{2}$
To: $\frac{\mu n^2 I^2 \pi b^2}{2}$

Page 586, 6th line above Eq. (9.97)
Change: R To: R
(Note: Use the same font as in **Eq. (9.100))**

Page 589, Figure 9.40(b)
Change dimensions in **Figure 9.40b**. The dimensions are correct but two of them are placed wrong. See figure attached







Page 590, second expression from top
Change:

$$H_g = \frac{\mu_{r1} N_1 I_1 (d-b) be}{e\left(b(d-b) + e(a+d-2b-g) + \mu_{r1} eg\right)\left(ec(a+d-2b) + bc(d-b)\right) - b^2(d-b)^2}$$

To:

$$H_g = \frac{\mu_{r1} N_1 I_1 (d-b) be}{e\left[b(d-b) + e(a+d-2b-g) + \mu_{r1} eg\right]\left[e(a+d-2b) + b(d-b)\right] - b^2(d-b)^2}$$

Page 596, 4th line above Eq. (9.115)
Change: $d\mathbf{l}'$ To: $d\mathbf{l}'$
(Note: change **I** to **l**!)

Page 599, 10th line from top of page
Change: ...(see **Example 8.6**)
To: ...(see **Example 9.7**)

Page 600, 2nd line above third expression from bottom
Change: $\mathbf{F}_d < \mathbf{F}_b$ To: $\mathbf{F}_d > \mathbf{F}_b$
Change: $\mathbf{F}'_d < \mathbf{F}'_b$ To: $\mathbf{F}'_d > \mathbf{F}'_b$

Page 600, 4th expression from bottom

Change: $$\mathbf{F}_2 = \oint_{C_2} Id\mathbf{l}' \times \mathbf{B}_2 = \int_{a'}^{b'} Id\mathbf{l}'_a \times \mathbf{B}_2 + \int_{b'}^{c'} Id\mathbf{l}'_b \times \mathbf{B}_2 + \int_{c'}^{d'} Id\mathbf{l}_c \times \mathbf{B}_2 + \int_{d'}^{a'} Id\mathbf{l}_d \times \mathbf{B}_2$$

To: $$\mathbf{F}_2 = \oint_{C_2} Id\mathbf{l}' \times \mathbf{B}_2 = \int_{b'}^{a'} Id\mathbf{l}'_a \times \mathbf{B}_2 + \int_{a'}^{d'} Id\mathbf{l}'_d \times \mathbf{B}_2 + \int_{d'}^{c'} Id\mathbf{l}'_c \times \mathbf{B}_2 + \int_{c'}^{a'} Id\mathbf{l}'_b \times \mathbf{B}_2$$

Page 600, 3rd expression from bottom
Change:

$$\mathbf{F}_l = \mathbf{F}_1 + \mathbf{F}_2 = \mathbf{F}_d + \mathbf{F}_b + \mathbf{F}'_b + \mathbf{F}'_d = \int_d^a Id\mathbf{l}_d \times \mathbf{B}_1 + \int_b^c Id\mathbf{l}_b \times \mathbf{B}_1 + \int_{b'}^{c'} Id\mathbf{l}'_b \times \mathbf{B}_2 + \int_{d'}^{a'} Id\mathbf{l}'_d \times \mathbf{B}_2$$

To:

$$\mathbf{F}_l = \mathbf{F}_1 + \mathbf{F}_2 = \mathbf{F}_d + \mathbf{F}_b + \mathbf{F}_b' + \mathbf{F}_d' = \int_d^a Id\mathbf{l}_d \times \mathbf{B}_1 + \int_b^c Id\mathbf{l}_b \times \mathbf{B}_1 + \int_{c'}^{b'} Id\mathbf{l}'_b \times \mathbf{B}_2 + \int_{a'}^{d'} Id\mathbf{l}'_d \times \mathbf{B}_2$$

Page 600, 2nd expression from bottom
Change:

$$\mathbf{F}_w = -\int_d^a I_1 \hat{\mathbf{y}} dy \times \left(-\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_2}\right) - \int_b^c I_1(-\hat{\mathbf{y}}) dy \times \left(-\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_1}\right) - \int_{b'}^{c'} I_2(-\hat{\mathbf{y}}) dy \times \left(\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_3}\right) - \int_{d'}^{a'} I_3 \hat{\mathbf{y}} dy \times \left(\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_4}\right) \quad [N]$$

To:

$$\mathbf{F}_w = \int_d^a I_1 \hat{\mathbf{y}} dy \times \left(-\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_1}\right) + \int_b^c I_1 \hat{\mathbf{y}} dy \times \left(-\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_2}\right) + \int_{c'}^{b'} I_2 \hat{\mathbf{y}} dy \times \left(\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_4}\right) + \int_{a'}^{d'} I_2 \hat{\mathbf{y}} dy \times \left(\hat{\mathbf{z}}\frac{\mu_0 I_0}{2\pi r_3}\right) \quad [N]$$

Page 600, 1st expression from bottom
Change: $\mathbf{F}_w = \hat{\mathbf{x}}\frac{\mu_0 I_0 I_2 d_1}{2\pi r_2} - \hat{\mathbf{x}}\frac{\mu_0 I_0 I_2 d_1}{2\pi r_1} + \hat{\mathbf{x}}\frac{\mu_0 I_0 I_3 d_2}{2\pi r_3} - \hat{\mathbf{x}}\frac{\mu_0 I_0 I_3 d_2}{2\pi r_4} \quad [N]$

To: $\mathbf{F}_w = \hat{\mathbf{x}}\frac{\mu_0 I_0 I_1 d_1}{2\pi r_1} - \hat{\mathbf{x}}\frac{\mu_0 I_0 I_1 d_1}{2\pi r_2} + \hat{\mathbf{x}}\frac{\mu_0 I_0 I_2 d_2}{2\pi r_3} - \hat{\mathbf{x}}\frac{\mu_0 I_0 I_2 d_2}{2\pi r_4} \quad [N]$

Page 601, Figure 9.48
Reverse direction of arrow in loop 1 in both figures.

Page 601, First expression from top
Change:

$$\mathbf{F}_w = \hat{\mathbf{x}}\frac{\mu_0 I_0}{2\pi}\left[\frac{I_2 d_1}{r_2} - \frac{I_2 d_1}{r_1} + \frac{I_3 d_2}{r_3} - \frac{I_3 d_2}{r_4}\right] = \hat{\mathbf{x}}\frac{4\pi\times10^{-7}\times5}{2\pi}\left[\frac{2\times0.8}{0.2} - \frac{2\times0.8}{0.1} + \frac{4\times1}{0.2} - \frac{4\times1}{0.4}\right] = -\hat{\mathbf{x}}2\times10^{-6} \quad [N]$$

To:

$$\mathbf{F}_w = \hat{\mathbf{x}}\frac{\mu_0 I_0}{2\pi}\left[\frac{I_1 d_1}{r_1} - \frac{I_1 d_1}{r_2} + \frac{I_2 d_2}{r_3} - \frac{I_2 d_2}{r_4}\right]$$

$$= \hat{\mathbf{x}}\frac{4\times\pi\times10^{-7}\times5}{2\times\pi}\left[\frac{2\times0.8}{0.1} - \frac{2\times0.8}{0.2} + \frac{4\times1}{0.2} - \frac{4\times1}{0.4}\right] = \hat{\mathbf{x}}1.8\times10^{-5} \quad [\mathrm{N}]$$

Page 603, 1st line above the 3rd expression from bottom
Change: ...flux intensity is...
To: ...flux density is...

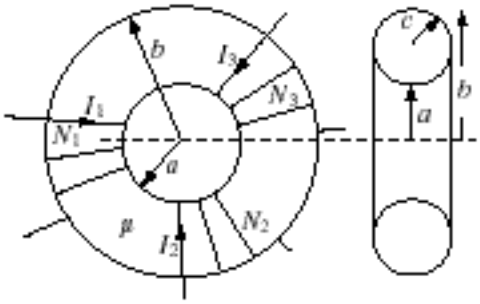
Page 603, 1st line above the 2nd expression from bottom
Change: (see **Eq. (9.91)**)
To: (see **Eq. (9.90)**)

Page 603, 2nd expression from bottom
Change: a^2
To: b^2 (2 locations)

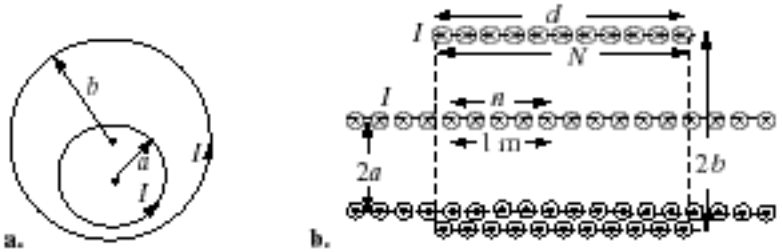
Page 603, 1st expression from bottom
Change: a^2 To: b^2

Page 616, Problem 9.2, third line:
Add closing bracket after .....plane of the first loop.... The text should look like: .....plane of the first loop) so.....

Page 619, Figure 9.64
Extend the dimension *b* to the edge of the circle (see attached figure)



Page 621, Figure 9.70(b)
Add arrows/dimensions as shown in Figure below.



Chapter 10

Page 655, 4th line from bottom of page
Change: ...positive while those...
To: ...positive whereas those...

Page 655, 3rd line fro bottom of page
Change: ...associated, whereas I_2...
To: ...associated, with I_2...

Page 665, 2nd expression from bottom of page
Change: σ_s To: σs
(note: *s* is not a subscript)

Page 679, Figure 10.36
Remove the two thick arrows (one pointing down, one up).

Chapter 11

Page 691, Eq. (11.13).
Place a negative sign after the equal sign!

Page 696, Eq. (11.27)
Change **E** to **B**. The correct equation is: $\nabla \cdot \mathbf{B} = 0$

Page 707, Table 11.3, third column, third row:
Change: $\frac{B_{1t}}{\mu_1} = \frac{B_{2t}}{\mu_2} = J$ to: $\frac{B_{1t}}{\mu_1} - \frac{B_{2t}}{\mu_2} = J$

Page 714, second expression from bottom of page, line 2 of the expression:
Change: $+j50(cos(60-3x+\pi/2)$
To: $+j50(sin(60-3x+\pi/2)$

Page 714, 3rd expression from top
Change: $\mathbf{E} = \hat{\mathbf{x}}\left(10\pi\, e^{-120y} + 20\pi\, e^{-120y} e^{\pi/2}\right)$
To: $\mathbf{E} = \hat{\mathbf{x}}\left(10\pi\, e^{-j120y} + 20\pi\, e^{-j120y} e^{j\pi/2}\right)$

Page 714, first expression from top of page
Change: $j(10\pi - j20\pi)$
To: $j(10\pi + j20\pi)$

Page 715, 3rd line above section 11.5.3
Change: ...equations **(11.67)** and....
To: ...equations **(11.68)** and....

Page 716, Second equation in the second table
Change: **Ds** To: **D**.*d***s**

Page 718, second line in problem 11.6
Change: ε_{r1} To: ε_r

Page 719, in problem 11.13
Change: ....in **Eqs. (11.23)** through....
to: ....in **Eqs. (11.24)** through....

Page 719, in problem 11.14
Change: ....in **Eqs. (11.23)** through....
to: ....in **Eqs. (11.24)** through....

Page 721, problem 11.24, third line:
Change: $\mu=8$
To: $\mu=\infty$

Page 722, in Problem 11.31.
The correct expression for E is:

$$E(z,t)=E_1\cos(\omega t-kz+\psi) + E_2\cos(\omega t+kz+\psi)$$

(Note: the term *kz* in the second cos term is positive!)

Chapter 12

Page 734, first expression above Exercise 12.2:
Remove the first equal sign

Page 745, 4th expression from top of page:
Change: $=-jkE_0e^{-jk0x}$
To: $=-jk_0E_0e^{-jk0x}$

Page 758, 5th line above 2nd expression from bottom
Change: ...this power over the...
To: ...this power density over the...

Page 761, 1st line above Eq. (12.60)
Change: ...and **(11.70)**:
To: ...and **(11.69)**:

Page 762, Eq. (12.69).
Change: **H.H** To: **H.H***

Page 763, 1st expression in Example 12.12
Change: $\mathbf{E} = \hat{\mathbf{y}}\eta_0 H_0 e^{-jkz}$ To: $\mathbf{E} = -\hat{\mathbf{y}}\eta_0 H_0 e^{-jkz}$

Page 765, Eq. (12.77)
Add equal sign. The correct expression is: $\nabla^2\mathbf{E} = j\omega\mu(j\omega\varepsilon)\mathbf{E}$

Page 771, 2nd line above Eq. (12.103)
Change: The phase constant...
To: The propagation constant...

Page 773, third expression from bottom:
Change: $\frac{\sigma}{c}$ To: $\frac{\omega}{c}$

Page 774, Eq. (12.114)
Change: $\sqrt{2\omega\mu\sigma}$ to: $\sqrt{2\omega/\mu\sigma}$ or: $\sqrt{\frac{2\omega}{\mu\sigma}}$

Page 776, fourth line from bottom of page:
Change: ....at 100 MHz (in the FM range)....
To: ....at 1 MHz (in the AM radio range)....

Page 779, first expression from top of page:
remove right bracket from under the square root sign.
Change: 10^{07} To: 10^{-7}

Page 803, first line in Problem 12.33.
Change: .....made of a iron... to: .....made of iron...

Page 803, Figure 12.27
Change: R To: r

Page 806, in Problem 12.44, second line
Change: $(\omega t - \beta z)$ to: $(\omega t - \beta x)$

Page 806, in Problem 12.46, second line
Change: $(\omega t - \beta z)$ to: $(\omega t - \beta x)$

Chapter 13

Page 812, 9th line under Eq. (13.24)
Change: ...**Eqs. (13.14)** and **(13.23)**
To: ...**Eqs. (13.23)** and **(13.24)**

Page 813, Eq. (13.32)
Change: $\hat{\mathbf{x}}$ to: $\hat{\mathbf{y}}$

Page 815, 2nd expression from bottom
Change: -17.952
To: $+17.952$

Page 817, Eq. (13.38)
Change: $\eta_0\sqrt{\frac{\mu_0}{\varepsilon_0}}$ to: $\eta_0 = \sqrt{\frac{\mu_0}{\varepsilon_0}}$

Page 818, in Figure 13.4, inside the ice layer:
Change: $\varepsilon=\varepsilon_0$ to: $\varepsilon=3.5\varepsilon_0$

Page 819, second expression above section 3.2.2:
Change: 201.52×377 to: $201.52+377$

Page 819, first expression above section 3.2.2:
Change: $E_4=E_4T_{12}$ to: $E_4=E_3T_{12}$

Page 822, Figure 13.6
Change: z (that is, the coordinate z)
To: $-z$

Page 834, Eq. (13.81)
Change: $e^{-j\beta_1 x\cos\theta_i}$
To: $e^{-j\beta_1 x\sin\theta_i}$

Page 834, line 11 below Eq. (13.82)
Change: ...in the y direction is v_{py}=....
To: ...in the z direction is v_{pz}=....

Page 838, Figure 13.14.
The labels H_i and E_{i1} should be interchanged.

Page 841, 1st line in section 13.4.1
Change: Now, we *perpendicular polarization* can return...
To: Now, we can return...

Page 842, Eq. (13.112)
Change:

$$\mathbf{H}_1(x,z) = -\hat{\mathbf{x}}\frac{E_{i1}}{\eta_1}(\cos\theta_i + \Gamma\ \cos\theta_i)e^{-j(\beta_1 x\sin\theta_i + z\cos\theta_i)}$$
$$+\hat{\mathbf{z}}\frac{E_{i1}}{\eta_1}(\sin\theta_i + \Gamma\ \sin\theta_i)e^{-j(\beta_1 x\sin\theta_i - z\cos\theta_i)}$$

To:
$$\mathbf{H}_1(x,z) = \hat{\mathbf{x}}\frac{E_{i1}\cos\theta_i}{\eta_1}\left[\Gamma\ e^{j\beta_1 z\cos\theta_i} - e^{-j\beta_1 z\cos\theta_i}\right]e^{-j\beta_1 x\sin\theta_i} + \hat{\mathbf{z}}\frac{E_{i1}\sin\theta_i}{\eta_1}\left[e^{-j\beta_1 z\cos\theta_i} + \Gamma\ e^{j\beta_1 z\cos\theta_i}\right]e^{-j\beta_1 x\sin\theta_i}$$

Page 848, lines 11 and 12
Change: $(\omega t - \beta_1 x\sin\alpha)$
To: $(\omega t + \beta_1 x\sin\alpha)$
(Note: there are three locations that need to be corrected)

Page 848, 4th expression from bottom
Change: $-\hat{\mathbf{x}}\frac{9\cos\alpha}{2\eta_0}$ To: $-\hat{\mathbf{x}}\frac{9\sin\alpha}{2\eta_0}$

Page 849, 1st expression above Exercise 13.12
Change: $\frac{2.726^2}{\eta_0}$ To: $\frac{2.726^2}{2\times\eta_0}$

Change: $\hat{\mathbf{z}}.25\times10^{-2}$ To: $\hat{\mathbf{z}}6.1\times10^{-3}$

Change: $\hat{\mathbf{x}}7.73\times10^{-2}$ To: $\hat{\mathbf{x}}7.73\times10^{-3}$

Page 850, Eq. (13.132)
Change: $\sin\theta_t = \sqrt{\frac{\mu_1\varepsilon_1}{\mu_2\varepsilon_2}}\sin\theta_t$
to: $\sin\theta_t = \sqrt{\frac{\mu_1\varepsilon_1}{\mu_2\varepsilon_2}}\sin\theta_i$

Page 851, Eq. (13.139)
The term in brackets should be under a square root sign. The correct form is as follows:
$$\theta_b = \sin^{-1}\left[\sqrt{\frac{\mu_2}{\mu_2+\mu_1}}\right]$$

Page 859, 2nd line from bottom of page
Change: ...(for material (1)...
To: ...(for material (1))...

Page 863, 2nd expression from top
Change: 0.011
To: 0.01

Page 866, 3rd line from bottom of page
Change: ...angle θ until...
To: ...angle α until...

Page 872, last line in problem 13.20
Change: 10 m
To: 10 mm

Page 874, one line from bottom (in problem 13.32)
Change: ....material constants ε_1 and μ_1 is given.
To: ....material constants ε_2, μ_2 and σ_2=0 are given

Chapter 14

Page 885, 4th line above Eq. (14.10)
Change: **Figure 14.5b**.
To: **Figure 14.5a**.

Page 886, 2nd line in caption to Figure 14.5
Change: **(b)** Calculation flux per unit length.
To: **(b)** Calculation of flux per unit length.

age 888, Table 14.1, line 4, column 3
Change: [F/m]
To: [H/m]

Page 888, Top row , first column in Table 14.1.
Change: **(Fig. 14.5a))** To: **(Fig. 14.3a))**
Change: **(Fig. 14.5d))** To: **(Fig. 14.3d))**
Change: **(Fig. 14.5e))** To: **(Fig. 14.3e))**

Page 889, 5th expression on the page
Change: = 0.921 To: = 1.842

Page 891, Eq. (14.22).
Change: $I(1)$ To: $\mathrm{I}(l)$

Page 893, 5th line from top
Change: ....in **Eq. (14.34)**. to: ....in **Eq. (14.33)**

Page 899 First expression from bottom of page
Change: $= 0.1e^{-j74,200} = 0.1$
To: $= \mathrm{V}(l = 0) \times 0.1e^{-j74,200}$

Page 911, 1st line above Eq. (14.82)
Change: **Eq. 14.81)**
To: **Eq. (14.81)**

Page 912, 1st expression from bottom
Change: = 0.26606 + ...
To: = − 0.26606 + ...

Page 915, second line above Eq. (14.92)
Change: ....move toward, the generator and a phase....
To: ....move toward the generator, and a phase....

Page 918, 11th line from bottom of page
Change: $|V_{min}$
To: V_{min}

Page 918, 7th line from bottom of page
Change: $|V+|$
To: $|V^{+}|$

Page 919, first line below Eq. (14.110)
Change: **Eq. (14.100)**
To: **Eq. (14.97)**

Page 919, third line below Eq. (14.110)
Change: **Eq. (14.102)**
To: **Eq. (14.98)**

Page 921, 1st expression from top
Change: $e^{-j0.3524\pi}$
To: $e^{j0.6476\pi}$

Page 922, 2nd expression from top
Change: $\frac{\lambda}{4\pi}(-0.3524\pi + \pi) = 0.162\lambda$
To: $\frac{\lambda}{4\pi}(0.6476\pi + \pi) = 0.412\lambda$

Page 922, 2nd line below 2nd expression from top
Change: $z = 0.162\lambda, 0.662\lambda, 1.162\lambda, 1.662\lambda, 2.162\lambda$
To: $z = 0.412\lambda, 0.912\lambda, 1.412\lambda, 1.912\lambda, 2.412\lambda$

Page 922, 4th line below 2nd expression from top
Change: $z = 0.412\lambda, 0.912\lambda, 1.412\lambda, 1.912\lambda, 2.412\lambda$
To: $z = 0.162\lambda, 0.662\lambda, 1.162\lambda, 1.662\lambda, 2.162\lambda$

Page 936, 2nd line in caption to Figure 14.27
Change: ...resonant frequencies... (Two locations on that line)
To: ...resonant frequency...

Page 945, last line:
Change: 10 m
to: 1 m

Chapter 15

Page 965, 2nd expression from bottom of page
Change: $4.0 - j1.05$
To: $4.0 + j1.05$

Page 965, 1st expression from bottom of page
Change: $0.04 - j0.0105$
To: $0.04 + j0.0105$

Page 966, 3rd line under Figure 15.11
Change: $0.23 + j0.06$
To: $0.23 - j0.06$

Page 966, 1st expression from bottom of page
Change: $23 + j6$
To: $23 - j6$

Page 969, 3rd line in section 15.4.2.1.
Change: ...line impedance.
To: ...line admittance.

Page 985, Eq. (15.20)
Change: θ_L
To: θ_Γ

Page 994, problem 15.15, first line.
Change: 68+j10 Ω to: 68+j100 Ω

Chapter 16

Page 999, Eq. (16.2)

Change: $V^+ = v_g \dfrac{Z_0}{Z_0 + Z_g}$

To: $V^+ = V_g \dfrac{Z_0}{Z_0 + Z_g}$

Change: $I^+ = \dfrac{V^+}{Z_0} = \dfrac{Z_g}{Z_0 + Z_g}$

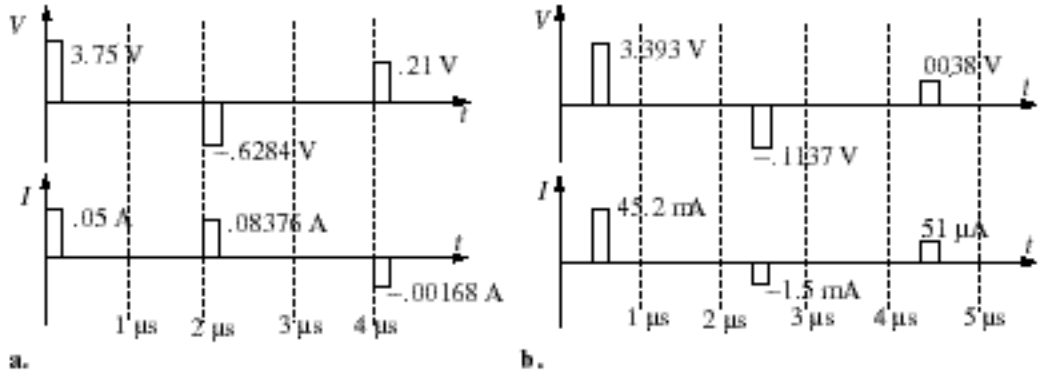
To: $I^+ = \dfrac{V^+}{Z_0} = \dfrac{V_g}{Z_0 + Z_g}$

Page 1005, Figure 16.8(a) (see figure attached under following correction)

Change: .08376
To: .005
Change: .00168
To: .000168

Page 1005, Figure 16.8(b)

Change the figure as shown (direction of voltages/currents and magnitudes)



Page 1007, Figure 16.10

Change: ΔV
To: Δt

Page 1008, 8th line above Figure 16.12

Change: Z_l
To: Z_L

Page 1014, Figure 16.17b

Change: 0.94+0.48
To: 0.96+0.48

Page 1020, Figure 16.25

Change: $V_4^- = V_g\Gamma_{21}^2$.....
To: $V_5^+ = V_g\Gamma_{21}^2$.....

Page 1020, 3rd line from bottom

Change: ...the position line.

To: ...the time line.

Page 1021, Figure 16.27
Change: Γ_2^2
To: Γ_{21}^2

Page 1031, Figure 16.35
Change: $V_1^- = \dfrac{V_0 Z_0}{Z_0 + Z_L}$
To: $V_1^- = -\dfrac{V_0 Z_0}{Z_0 + Z_L}$

Page 1031, Figure 16.36a
Change: $-V_1^-$ (5 occurrences)
To: $+V_1^-$

Page 1032, 2nd expression from top
Change: $-V_1^-$ (3 occurrences)
To: $+V_1^-$
Change: V_{Lt}
To: V_L

Page 1032, 3rd expression from top
Change: $I_{Lt}(10\text{ ms}) = -I_1^- - I_1^-\Gamma_g - I_1^-\Gamma_g\Gamma_L$
To: $I_{line}(10\text{ ms}) = I_1^- - I_1^-\Gamma_g + I_1^-\Gamma_g\Gamma_L$

Page 1038, in problem 16.16, line 4
Change: R=75Ω to: R=125Ω

Page 1038, in problem 16.16(b)
Change: ... in R to be.... to: ... on R to be....

Chapter 17

Page 1044, Eq (17.10)
Change: ∂_z (4 occurrences)
To: ∂z

Page 1045, Eq (17.17)
Change: ∂_y
To: ∂y
Change: ∂_x
To: ∂x

Page 1045, Eq (17.18)
Change: ∂_y
To: ∂y
Change: ∂_x
To: ∂x

Page 1045, Eq (17.19)
Change: ∂_y
To: ∂y
Change: ∂_x
To: ∂x

Page 1045, Eq (17.20)
Change: ∂_y
To: ∂y
Change: ∂_x
To: ∂x

Page 1045, Eq (17.21)
Change: ∂_y
To: ∂y
Change: ∂_x
To: ∂x

Page 1046, Eq (17.26)
Change: E_X
To: E_x

Page 1047, Eq (17.31), second expression
Change: ∂_x
To: ∂x

Page 1049, Eq (17.40)
Change: $= \pm\omega\sqrt{\ldots}$
To: $= \pm j\omega\sqrt{\ldots}$

Page 1051, Eq (17.53)

Change: ∂_x
To: ∂x

Page 1051, Eq (17.54)
Change: ∂_y
To: ∂y

Page 1051, Eq (17.55)
Change: ∂_y
To: ∂y

Page 1054, 1st expression from top of page
Change: f_2^2
To: f_c^2

Page 1056, 2nd line above Eq. (17.65)
Change: ...energy propagates.
To: ...power propagates

Page 1061 Eq. (17.83)
Change: m_λ
To: $m\lambda$
(**note:** λ is not a subscript!!)

Page 1065, 2nd expression from bottom
Change: = 1215.9
To: = 2432

Page 1066, 1st line from top
Change: $\theta_{(z=0)} = 0$
To: $\theta(z=0) = 0$
(**note:** $(z=0)$ is not a subscript!!)

Page 1066, 1st line under Eq. (17,100)
Change: ...and **(17.64)** are easy...
To: ...and **(17.64)** is easy...

Page 1066, Fig. 17.10
Change: $-\hat{\mathbf{z}}E_{i1}cos\theta_i$
To: $-\hat{\mathbf{z}}E_r cos\theta_i$

Page 1066, Eq. (17.100)
Change: E_{il}
To: E_{i1}

Page 1068, Eq. (17.107)
Change: $+\hat{\mathbf{z}}E_0$....
To: $-\hat{\mathbf{z}}E_0$....

Page 1074, Eq. (17.112)
Change: ...in the x direction

To: ...in the *y* direction

Page 1074, Eq. (17.113)
Change: ...in the *y* direction
To: ...in the *x* direction

Page 1076, Eq. (17.129)
Change: $\left(\frac{n\pi}{a}\right)$
To: $\left(\frac{n\pi}{b}\right)$

Page 1076, Eq. (17.130)
Change: $\left(\frac{n\pi}{a}\right)$ (two locations in the expression!)
To: $\left(\frac{n\pi}{b}\right)$

Page 1079, Eq. (17.153)
Change: $\int_{x=0}^{y=b} \ldots.$
To: $\int_{y=0}^{y=b} \ldots.$

Page 1080, 1st line abve Example 17.5
Change: **Section 17.8**
To: **Section 17.9**

Page 1082, in answer to Exercise 17.6
Change the frequency under the TM_{33} column from: 48.218
To: 54.08
Also: Move this whole column after the TM_{51} column

Page 1084, 1st line under Eq. (17.169)
Change: ....replace γ by $j\beta$, we....
To: ...replace γ by $j\beta_g$, we....

Page 1087, 2nd line from bottom of Table 17.3
Change: ε0
To: ε_0

Page 1087, last line in Table 17.3
Change: ε0
To: ε_0

Page 1088, 1st expression from top
Change: $\frac{c}{2f}$
To: $\frac{c}{2f_{c10}}$

Page 1093, 2nd line in Example 17.9
Change: ...and is silver coated...

To: ...and is gold coated...

Page 1093, 3rd line in Example 17.9
Change: σ_d=0.001 S/m...
To: σ_d=10^{-5} S/m...

Page 1095, 3rd expression from top
Change: $\frac{1}{\sqrt{\pi f \mu_0 \sigma}}$
To: $\frac{1}{\sqrt{\pi f \mu_0 \sigma_c}}$

Page 1095, 2nd expression from bottom
Change: $j\beta_g a$
To: $\beta_g a$

Page 1096, 2nd line under 2nd expression from top
Change: 101.938
To: 152.9

Page 1096, 3rd expression from top
Change: 101.938 (Two locations)
To: 152.9

Page 1096, 3rd expression from top
Change: 0.00636
To: 0.00928

Page 1096, 3rd expression from top
Change: 0.00868
To: 0.0116

Page 1096, 1st line under 3rd expression from top
Change: 0.00868 (Two locations)
To: 0.0116

Page 1096, 1st line under 3rd expression from top
Change: 0.0754
To: 0.1

Page 1096, 2nd expression from bottom
Change: $P_0 e^{-200\times0.00868}$
To: $P_0 e^{-200\times0.0116}$

Page 1096, 2nd expression from bottom
Change: $P_0 = \frac{1}{e^{-1.736}} = 5.67$
To: $P_0 = \frac{1}{e^{-2.32}} = 10.18$

Page 1096, 1st line under 2nd expression from bottom

Change: Even though the attenuation is rather low, 82.44% of....
To: That is, over 90% of....

Page 1098, 1st line above Eq. (17.191)
Change: **(17.33)**
To: **(17.57)**

Page 1098, 1st line above Eq. (17.192)
Change: **(17.57)**
To: **(17.33)**

Page 1100, 1st line under Eq. (17.204)
Change: ...the constant A_3 was...
To: ...the constant B_3 was...

Page 1101, 3rd line from top
Change: ...**Exercise 17.4**:
To: ...**Exercise 17.5**:

Page 1101, Eq. (17.213)
Change: $\left(\frac{p\pi y}{d}\right)$
To: $\left(\frac{p\pi z}{d}\right)$

Page 1101, 2nd line under Eq. (17.213)
Change: ...**Exercise 17.4**:
To: ...**Exercise 17.5**:

Page 1105, Eq. (17.232)
Change: +
To: −

Page 1105, Eq. (17.233)
Change: +
To: −

Page 1116, 3rd line in Problem 17.21
Change: **17.4**
To: **17.5**

Chapter 18

Page 1121, 8th line above section 18.3
Change: $1\sqrt{\pi f \mu \sigma}$
To: $1/\sqrt{\pi f \mu_0 \sigma}$

Page 1121, 7th line above section 18.3
Change: 0.515 mm
To: 9.19 mm

Page 1121, 6th line above section 18.3
Change: 3.99×10^{-3} mm
To: 0.07 mm

Page 1121, 5th line above section 18.3
Change: ...about 40 μm...
To: ...about 70 μm...

Page 1123, 1st line under Eq. (18.5)
Change: The polarization vector of the dipole, which.....
To: The dipole moment, which.....

Page 1128, 11th line under Eq. (18.28)
Change: **Eq. (18.28)**
To: **Eq. (18.27)**

Page 1129. In Eq. 18.31
Change: $\hat{\varphi}$
To: $\hat{\theta}$.

Page 1135, 4th expression from top
Change: $\sqrt{\varepsilon_r f}$
To: $\sqrt{\varepsilon_r}\, f$
(i.e., *f* should be outside the square root sign)

Page 1142, 3rd line from bottom
Change: 0.1λ
To: 0.1 m

Page 1143, 2nd line under 4th expression from top
Change: 0.158/0.8594
To: 0.158/0.7594

Page 1144, Figure 18.10b
Correct the figure to show φ′ between the *x* axis and the first arrowed radius shown.

Page 1153, 2nd line above Eq. (18.87).
Change: k=1,2,3.....
To: k=1,3,5,.....

Page 1153, last expression on page
Change in second expression only!!! (that for H)

Change: $\mathbf{H} = \hat{\varphi}\frac{j\eta I_0}{2\pi R}$ .....

To: $\mathbf{H} = \hat{\varphi}\frac{jI_0}{2\pi R}$ .....

Page 1161, 1st line under 2nd expression from top
Change: **Eq. (18.101)**
To: **Eq. (18.36)**

Page 1162, 4th expression from top
Change: $\frac{\lambda_{720}}{\lambda_{600}}$
To: $\frac{\lambda_{600}}{\lambda_{720}}$

Page 1163, 9th line in section 18.7.2
Change: **Figure (18.20a)**
To: **Figure (18.19b)**

Page 1174, 4th expression from bottom
Change: $\frac{j240}{R}$
To: $\frac{j120}{R}$

Page 1174, 3rd expression from bottom
Change: $\frac{j2}{\pi R}$
To: $\frac{j}{\pi R}$

Page 1178, lines 11 from bottom of page.
Change: $\lambda/2$
To: λ

Page 1178, lines 10 from bottom of page.
Change: $\lambda/2$
To: λ

Page 1178, lines 10 from bottom of page.
Change: $\lambda/2$
To: λ
Change: $\pi/2$
To: π

Page 1179, 1st line above the 1st expression from bottom of page.
Change: $\phi = \pi/2$
To: $\phi = \pi$

Page 1179, 5th expression from bottom

Change: $\beta h\pi$
To: βh

Page 1186, in title of Example 18.13:
Change: **Effective operture.....**
To: **Effective aperture.....**

Page 1192, 2nd expression from bottom
Change: $(20{,}000)^4$
To: $(200{,}000)^4$

Page 1192, 1st expression from bottom
Change: $(10{,}000)^4$
To: $(100{,}000)^4$

Page 1195, 1st line in question 10
Change: ...concept or radiation...
To: ...concept of radiation...

Page 1199, problem 18.17, part (c)
Change: The directivity
To: The maximum directivity

Page 1199, problem 18.18, part (d)
Change: The directivity
To: The maximum directivity

Page 1199, last line of the page
Change: ...parallel for each...
To: ...parallel to each...

ANSWERS

Answers to Chapter 1

Page 1203, answer to problem 1.24:

Change: (a). $\mathbf{A} = \widehat{\mathbf{R}}\ 6.742 - \hat{\theta}\ 1.4822 - \widehat{\varphi} 1.1094$

To: (a). $\mathbf{A} = \widehat{\mathbf{R}}\ 5.878 - \hat{\theta}\ 1.4822 - \widehat{\varphi} 1.1094$

Answers to Chapter 2

Page 1203, answer to problem 2.15 (b) and (c).

In **(b):**

In the *y* component: Change: $-x^2y$ to: x^2y

In **(c)**

Change the φ component from: $\widehat{\varphi}\left(2\cos\varphi\ \sin\varphi - \frac{\cos\theta\cos\varphi}{\sin\theta}\right)$

to: $\widehat{\varphi}\left(2\cos\varphi\ \sin\varphi - \frac{\cos\theta\cos\varphi}{R\sin\theta}\right)$

Note: everything else remains unchanged.

Answers to Chapter 3

Page 1204, answer to problem 3.14.

Correct answer is:

(a) $0.289L$ or $0.125L$ from centers of sides of the triangles (each of length L) and at ∞.

Page 1204, answer to problem 3.22:

Change: ρ_s

To: ρ_0

Page 1204, answer to problem 3.29:

Change: (a). $\hat{\mathbf{x}} 8.988\times10^{-7}$ N. (b). $\hat{\mathbf{x}} 1.096\times10^{-8}$ N.

To: (a). $8.988\times10^{-7}/d^2$ N (b). $1.11\times10^{-8}/d^2$ N

Page 1204, answer to problem 3.30:

Change: (b) $R<R_1$ and $R>R_2$. $R_1<R<R_2$

To: (b). $R<r_1/2$ and $R>r_2/2$. $r_1/2<R<r_2/2$

Answers to Chapter 4

Page 1204, answer to problem 4.2(a).

Change: -8.854×10^{-26}

To: 8.854×10^{-26}

(that is, remove the negative sign)

Page 1204, answer to problem 4.5:

Change: $\hat{\mathbf{y}}(\rho_s/\varepsilon_0 - \rho_v a/\varepsilon_0)$, $-b< y<-a$, $\hat{\mathbf{y}}(\rho_s/\varepsilon_0 + \rho_v a/\varepsilon_0)$, $a< y<b$, $\hat{\mathbf{y}}\rho_v x/\varepsilon_0$, $0< y<a$

To: $\hat{\mathbf{y}}(-\rho_s/\varepsilon_0 - \rho_v a/\varepsilon_0)$, $-b< y<-a$, $\hat{\mathbf{y}}(-\rho_s/\varepsilon_0 + \rho_v a/\varepsilon_0)$, $a< y<b$, $\hat{\mathbf{y}}\rho_v y/\varepsilon_0$, $0< y<a$

Page 1204, answer to problem 4.7c,d:

Change: (c) $\mathbf{E}=-\hat{\mathbf{R}}(60+R^3)/3\varepsilon_0 R^2$ (d) $\mathbf{E} = -\hat{\mathbf{R}}148/3R^2$.

To: (c) $\mathbf{E}=-\hat{\mathbf{R}}(-68+R^3)/3\varepsilon_0 R^2$ (d) $\mathbf{E} = -\hat{\mathbf{R}}148/3\varepsilon_0 R^2$

Page 1204, answer to Problem 4.11.

Add to the given answer: (down)

(Note: this would indicate that $-y$ direction is down).

Page 1204, answer to problem 4.14a and c:

Change: (a) $\rho_v=4\varepsilon_0\varepsilon_r b$ (c) $\Phi=\varepsilon_0\varepsilon_r b^4\pi$.

To: (a) $\rho_v=4\varepsilon b$ (c) $\Phi=\varepsilon b^4\pi$.

Page 1204, answer to Problem 4.16.

Change: -8

To: 8

Page 1204, answer to problem 4.19.

Change answer to: (a) $\rho_{sb} = \dfrac{V\varepsilon_0}{b\ ln(a/b)}$, (b) $\rho_{sa} = -\dfrac{V\varepsilon_0}{a\ ln(a/b)}$

(Note: the answer is correct but written in terms of V_{ab} which equals V (given))

Page 1204, answer to problem 4.21(b).

Change answer to: **(b)** $V = \dfrac{\rho_l}{4\pi\varepsilon_0} ln\left(\dfrac{\sqrt{2}-1}{\sqrt{10}-3}\right)$

Page 1204, answer to problem 4.22:

Change: zero.

To: $\mathbf{E}=\hat{\mathbf{x}}\rho_l/\pi\varepsilon_0 d$ [V/m] (*down*).

Page 1204 and 1205, answer to problem 4.23.

The correct answer is as follows:

4.23 (a). $\mathbf{E} = \hat{\mathbf{x}}\rho_v x/\varepsilon$ for $-a<x<a$ (the $x=0$ plane is midway between the plates),

$\mathbf{E} = \hat{\mathbf{x}}\rho_v a/\varepsilon_0$ *for* $x>a$, $\mathbf{E} = -\hat{\mathbf{x}}\rho_v a/\varepsilon_0$ *for* $x<-a$. **(b)** $V=\rho_v(a^2-x^2)2\varepsilon$.

Page 1205: Answers # 28 through 59:

Change: # 28 through # 59

To: 27 through 58. (that is, answer marked as 28 becomes answer 27 and so on).

Page 1205, answer to problem 4.26(c):

Change: (c) $-\hat{\mathbf{x}}2 + \hat{\mathbf{y}}2 - \hat{\mathbf{z}}4$

to: (c) 4.9

Page 1205, answer to Problem 4.29.

Change V_{ca} to V_0 in first answer (for ρ_{sc}) and change V_{ca} to $-V_0$ in the second answer (for ρ_{sa})

Page 1205, answer to problem 4.29.
Change ρ_{sa}=... to: ρ_{sa}= − ..
(that is, the negative sign is missing)

Page 1205, answer to problem 4.31.
Change *r* to *R* in answer.

Page 1205, answer to problem 4.32.
Change $\widehat{\mathbf{R}}$ to $\hat{\mathbf{r}}$ in answer.

Page 1205, answer to Problem 4.32.
Change *Q* to ρ_l (otherwise the answer is correct)

Page 1205, answer to Problem 4.38(b).
Change: (b) 4.899×10^5 V to: (b) 5.024×10^5 V

Page 1205, Answer to problem 4.33
Correct answer is:
(a) 120 kV/m. (b) $P=3.187\times10^{-6}$ C/m^2

Page 1205, answer to Problem 4.35(b).
correct answer is: **(b)** 15,093.75 V

Page 1205, answer to Problem 4.42(b).
replace existing answer to part (b) with

$$\frac{P_{1t}}{P_{2t}} = \frac{\varepsilon_1 - \varepsilon_0}{\varepsilon_2 - \varepsilon_0}, \quad \frac{P_{1n}}{P_{2n}} = \frac{\varepsilon_2(\varepsilon_1 - \varepsilon_0)}{\varepsilon_1(\varepsilon_2 - \varepsilon_0)}$$

Note: Current solution is correct but this is clearer

Page 1205, answer to problem 4.47.
Change $C=4\pi\varepsilon_1\varepsilon_2 bca$(.....
to: $C=4\pi\varepsilon_1\varepsilon_2 bca/$(.....
(that is, there is a divide sign between ...*bca* and the bracket)

Page 1205, answer to problem 4.51.
Add: (b) $W = \dfrac{\varepsilon V^2}{200}\dfrac{a}{d(d-a)}$ [J]

Page 1205, answer to problem 4.52.
Change the current answer with its negative. The corrected answer should be:

$$W=\frac{Q^2}{8\pi}\left[\frac{1}{a}-\frac{1}{b}\right]\left[\frac{1}{\varepsilon}-\frac{1}{\varepsilon_0}\right]=\frac{Q^2}{8\pi\varepsilon_0}\left[\frac{1}{a}-\frac{1}{b}\right]\left[\frac{1-\varepsilon_r}{\varepsilon_r}\right] \quad [\text{J}]$$

Page 1205, answer to problem 4.53 b:
Change: (b) $W = \dfrac{(q+4\pi a^2\rho_0)^2}{8\pi\varepsilon_0}\left[\dfrac{1}{a}-\dfrac{1}{b}\right]$.
To: (b) $W = \dfrac{(q+4\pi a^2\rho_0)^2}{16\pi\varepsilon_0}\left[\dfrac{1}{a}-\dfrac{1}{b}\right]$ [J].

Answers to Chapter 5

Page 1205, answer to problem 5.2.
Change: $k=-0.6yz$. $V(x) =$
To: $k=-0.2yz$. **4.** $V(x) =$

Page 1205, answer to problem 5.6a and b:
Change: (a) $V(r) = 23.083 \ln r + 191.45$ V (b) $\mathbf{E} = -\hat{\mathbf{r}} 23.083/r$
To: (a) $V(r) = -23.083 \ln r - 127.45$ V (b) $\mathbf{E} = \hat{\mathbf{r}} 23.083/r$ V/m

Page 1205, answer to Problem 5.8.
Correct answer is: **8.** (a) $V(R)=25.25/R-5000$[V]. (b) $\mathbf{E}=\hat{\mathbf{R}}\ 25.25/R^2$ [V/m].

Page 1206, solution to Problem 5.22.
Correct solution is: 16.178 V/m (down)

Page 1206, answer to problem 5.32.
Correct answer is:

$$V(x,y)=\frac{4}{\pi}\left[V_2 \sum_{m=1,3,5,\ldots}^{\infty} \frac{1}{m} \sin\frac{m\pi y}{b} \frac{\sinh\left(\frac{m\pi x}{b}\right)}{\sinh\frac{m\pi a}{b}} + V_1 \sum_{m=1,3,5,\ldots}^{\infty} \frac{1}{m} \sin\frac{m\pi y}{b} \frac{\sinh\left(\frac{m\pi(a-x)}{b}\right)}{\sinh\frac{m\pi a}{b}}\right]$$

Answers to Chapter 6

Page 1206, answer to problem 6.11.
Change: (a) 4.97×10^{-16} F (b) 4.355×10^{-16} F
To: (a) 4.913×10^{-17} F (b) 4.395×10^{-17} F

Answers to Chapter 7

Page 1207, answer to problem 7.1.
part (b) should be: (b) 4,870 km^2.

Page 1207, answer to problem 7.10:
Change: (a) 1.56098×10^{-5} Ω. (b) 1.4303×10^{-5} Ω
To: (a). 1.7243×10^{-5} Ω. (b) 1.5936×10^{-5} Ω

Page 1207, answer to problem 7.14:
Change the unit after solution from: V to: [V] to distinguish it from the value V inside the relation

Page 1207, answer to Problem 7.16.
Correct answer for R is: $R=\frac{1}{b^2\sqrt{a\sigma_0}} \tan^{-1}\left(\sqrt{\frac{a}{\sigma_0}}d\right)$

(the answer for voltage is correct as is)

Page 1207, answer to Problem 7.19.
Change: 7.54 mm for parallel....
To: 7.28 mm for parallel...
Change: 357.2 kg for parallel....
To: 333 kg for parallel...

Page 1207, answer to Problem 7.22
Correct solution is:
(a) 3.674×10^{-5} Ω. (b) 6.021×10^{-4} Ω. (c) 5.919 W.

Page 1207, answer to problem 7.27.
Change: (a) V=8.944 mV, *I*=3512 A
To: (a) *V*=6.324 mV, *I*=2483.4 A

Answers to Chapter 8

Page 1207, answer to Problem 8.1.
Correct answer is: $\mathbf{B}=-\hat{\mathbf{z}}9\mu_0 I/2\pi a$ [T] (into the page)
(Note: answer currently correct but not clear (not written as a vector). Also, it assumes *z* direction is up)

Page 1207, answer to Problem 8.2.
Add to answer : [T], (out of the page)

Page 1207, answer to Problem 8.3.
Add to answer: [A/m], (out of the page)

Page 1207, answer to Problem 8.4
Correct answer to (a) to: (a) $\mathbf{B}_1 = -\hat{\mathbf{y}}\,\frac{\mu I}{2\pi a}\left[\frac{1}{\sqrt{2}}-1\right]$ [T]
Add to answer: (out of the page).
Add [T] to the second answer ($\mathbf{B}_2$...).

Page 1207, answer to Problem 8.5
Add to answer: (up).

Page 1207, answer to problem 8.8.
Last part of the answer should be:
$\mathbf{B} = -\hat{\mathbf{x}}\frac{\mu_0 I}{2\pi|z|} - \hat{\mathbf{y}}\frac{\mu_0 I}{2\pi d}, z<-a$

Page 1207, answer to Problem 8.10
Answer (b): add to the existing answer: $=-\hat{\mathbf{y}}\ 5.8710^{-6}$ T.
Also add: (down)

Page 1207, answer to Problem 8.12.
Interchange between the + and − signs (the field for *x*>0 should be positive, that for *x*<0 should be negative)

Page 1207, answer to problem 8.18:

Change: $H = \frac{\mu_0 J}{2}\left(\frac{b^2}{a} - \frac{c^2}{(a-d)}\right)$.

To: $H = \frac{J}{2}\left(\frac{b^2}{a} - \frac{c^2}{(a-d)}\right)\left[\frac{\text{A}}{\text{m}}\right]$.

Page 1207, answer to problem 8.19.

Change: $-\hat{\mathbf{z}}\sqrt{2}$ to: $-\hat{\mathbf{z}}J/2$

Page 1207, answer to Problem 8.20(a).

Change: r to: a in the given answer

Page 1208, answer to problem 8.24

Change: Ψba

To: Ψ_{NS}

Page 1208, answer to problem 8.25

Add to answer: (down)

(Note: This would indicate that the y direction is up.)

Answers to Chapter 9

Page 1208, answer to Problem 9.1 (a)

Correct answer is: $m = \pi a^2 I$ [A.m^2] (replace the existing answer with this)

Page 1208, Answer to problem 9.15.

Replace the existing answer with the following:

(a) $L_{12}=L_{21}=\mu_0\pi a^2 b^2/2h^3$ [H]. (b) $L_{12}=L_{21}=\mu_0\pi a^2 b^2/4h^3$ [H].

Page 1208, Answer to problem 9.16.

Replace the existing answer with the following:

$L_{11} = \frac{\mu_0}{2\pi} \ln\frac{a}{b} \quad \left[\frac{\text{H}}{\text{m}}\right]$

(the answers of 9.15 and 9.16) have been accidentally switched around)

Page 1208, answer to problem 9.18(b)

Remove I_1 from the answer

Page 1208, answer to problem 9.21

The correct answer is as follows:

$$\Delta W = \frac{\mu_1 N^2 I^2 (r_2 - r_1)c}{2}\left[\frac{1}{\pi(r_2+r_1)} - \frac{\mu_0}{\mu_0\pi(r_2+r_1) + l_g(\mu_1 - \mu_0)}\right] \text{ [J]}$$

Page 1208, answer to problem 9.33

Change answer to: F=0.0005 N (perpendicular to **B**)

Answers to Chapter 10

Page 1208, answer to problem 10.4
Change R to r (to correspond to problem statement). Also remove the negative sign. The correct answer should be: $|\text{emf}|=v_0\mu_0 J r_1^2/2r$ [V]

Page 1208, answer to problem 10.3(a).
In the existing answer, replace: bd^2 with: d^3

Page 1208/1209, answer to problem 10.11
Change: $-0.1\pi(\sin(800\pi t+800\pi\cos(800\pi t)))$
to: $-0.1\pi\sin(800\pi t)$

Page 1209, answer to problem 10.13
Change: 0.001 N.m
to: 0.1 N.m

Page 1209, answer to Problem 19(b)
Change: $emf_2 = 100\cos(2\pi\times10^5 t)$
To: $emf_2 = 100\pi\cos(2\pi\times10^5 t)$

Answers to Chapter 11

Page 1209, answer to problem 11.25 (a).
Correct answer is: $\mathbf{J} = \hat{\mathbf{x}}\,10^6/16\pi + \hat{\mathbf{y}}\,10^6/8\pi$ A/m

Page 1209, answer to problem 11.34(b)
Remove π from the answer. The correct answer is: $\mathbf{H} = -\hat{\mathbf{x}}\,1{,}250\,e^{-j50z} + \hat{\mathbf{y}}1{,}250\,e^{-j50z}$

Answers to Chapter 12

Page 1209, answer to Problem 12.14
Change: $3.87\times10^{-17}e^{-j38.95}$
To: $3.2\times10^{-16}e^{-j41.3}$
Add the following: $\mathbf{H}(x=1m) = \hat{\mathbf{y}}2.3\times10^{-17}e^{-j42.03}$ A/m

Page 1210, answer to problem 12.39.
Change: $v_p(f=10^8)=10^4$ m/s
to: $v_p(f=10^8)=316.23$ m/s
Change: $v_p(f=10^6)=2\times10^4$ m/s
to: $v_p(f=10^8)=632.45$ m/s

Answers to Chapter 13

Page 1210, answer to problem 13.5
Change: 5.244 V/m to: 7.414 V/m
Change: 0.01866 A/m to: 0.0264 A/m

Page 1210, answer to problem 13.15(d)
Change: E_{tx}=7.26, E_{ty}=3.63 *V/m*
To: E_{tx}=5.93, E_{ty}=5.55 *V/m*
Change: E_{rx}=1.1
To: E_{rx}=−1.1

Page 1211, answer to problem 13.24.
Change: θ_i to: θ
Also: Write the reflection coefficients as absolute values? Or change the problem statement.

Page 1211, answer to problem 13.35.
The correct answer is: $d = \dfrac{tan^{-1}\left(\dfrac{\eta_1}{\eta_2}e^{-\frac{j\pi}{2}}\right)}{\omega\sqrt{\mu_2\varepsilon_2}}$
Remove (a) (there is no (a))

Page 1211, answer to problem 13.22(a).
Correct answer for part (a) is: $\varphi_T = tan^{-1}\dfrac{\eta_0 cos\theta_t}{2\sqrt{\dfrac{\omega\mu_2}{2\sigma_2}}\,cos\theta_i + \eta_0 cos\theta_t}$
Answer to part (b) is correct.

Answers to Chapter 14

Page 1211, answer to problem 14.10
Change: 635.68−j19.9 Ω
To: 635.36 Ω

Page 1211, answer to problem 14.16.
Change: $\Gamma_{in}\dfrac{Z_1\left(1+\Gamma_L e^{-j2\beta_2 d}\right)-Z_2\left(1+\Gamma_L e^{-j2\beta_2 d}\right)}{Z_1\left(1+\Gamma_L e^{-j2\beta_2 d}\right)+Z_2\left(1+\Gamma_L e^{-j2\beta_2 d}\right)}e^{-j2\beta_1 a}$
To: $\Gamma_a = \dfrac{Z_2\left(1+\Gamma_L e^{-j2\beta_2 d}\right)-Z_1\left(1-\Gamma_L e^{-j2\beta_2 d}\right)}{Z_2\left(1+\Gamma_L e^{-j2\beta_2 d}\right)+Z_1\left(1-\Gamma_L e^{-j2\beta_2 d}\right)}e^{-j2\beta_1 a}$

Page 1211, answer to problem 14.23.
The correct answer is:
$$Z_{in}=Z_{01}\frac{Z_{01}\left[Z_L+Z_{01}tan\,\beta_1 l_2\right]\left[Z_{02}+Z_L tan\,\beta_2 l_1\right]+Z_{02}\left[Z_L+Z_{02}tan\,\beta_2 l_1\right]\left[Z_{01}+Z_L tan\,\beta_1 l_2\right]+Z_{01}\left[Z_{01}+Z_L tan\,\beta_1 l_2\right]\left[Z_{02}+Z_L tan\,\beta_2 l_1\right]tan\,\beta_1 l_3}{Z_{01}\left[Z_{01}+Z_L tan\,\beta_1 l_2\right]\left[Z_{02}+Z_L tan\,\beta_2 l_1\right]+Z_{01}\left(\left[Z_L+Z_{01}tan\,\beta_1 l_2\right]\left[Z_{02}+Z_L tan\,\beta_2 l_1\right]+Z_{02}\left[Z_L+Z_{02}tan\,\beta_2 l_1\right]\left[Z_{01}+Z_L tan\,\beta_1 l_2\right]\right)tan\,\beta_1 l_3}$$

Page 1212, answer to problem 14.37
Change answers to:
(a) V_L=9.98 111.55° V. (b) 0.003 W

Answers to Chapter 15

Page 1212, answer to problem 15.7.
Correct answer is: 0.058 m, 125 Ω.

Page 1212, answer to Problem 15.14.
Change: d_{11} to: d_{21}
Change: d_{21} to: d_{11}
Change: d_{12} to: d_{22}
Change: d_{22} to: d_{12}
(otherwise the answers are correct)

Page 1212, answer to problem 15.15:
Correct answer is:
d_{11}=0.047λ, d_{21}=0.081λ, d_{12}=0.346λ, d_{22}=0.384λ

Answers to Chapter 16

Page 1212, answer to problem 16.10.
Change: 10μs (two occurences)
to: 10.5μs
Change: −0.06745
to: −0.06739

Answers to Chapter 17

Page 1213, answer to problem 17.5
Change: −0.29 to: −0.268
Change: 0.71 to: 0.732
Change: 1.817 to: 1.732

Page 1213, answer to problem 17.9.
Change: $2E_0$ to: E_0
(throughout the answer)

Page 1213, answer to problem 17.10.
Change: $2H_0$ to: H_0
(throughout the answer)

Page 1213, answer to problem 17.13
Remove from answer the following: TE_{21}=TE_{21} (14.024 GHz)

Page 1213, answer to problem 17.14.
Change: 3052.73 to: 3053.4

Page 1213, answer to problem 17.16.

Change: $\frac{c}{\sqrt{\varepsilon_{r1}\mu_{r1}}}$ to: c

Change: f_c to: f_{c0}

Answers to Chapter 18

Page 1213, answer to Problem 18.5(a)

Change: $a=\sqrt{\Delta l'/\pi b}$

To: $0.0318\ \lambda$

Page 1214, answer to problem 18. 33(a)

Change: (a) $I_0 = 2.469\times10^{-4}$ A.

to: (a) $I_0 = 4.969\times10^{-4}$ A.