Corrections to Thomas L. Harman, Advanced Engineering Mathematics with MATLAB- Page 1/4

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This is a summary of the corrections to the second edition.

Dr. Thomas L. Harman
 Faculty Senate President 2002-2003
 Distinguished Professor 2005-2007
University of Houston/Clear Lake
2700 Bay Area Boulevard
Houston, TX 77058
 harman@uhcl.edu
 http://sce.uhcl.edu/harman/
 Phone: 281 283-3774
 Fax: 281 283-3870

Page xiv Correct Web site in preface: Change www.brookscole.com ... to

   http://www.cengagebrain.com/shop/index.html

   Then enter ISBN number 0-534-37164 and Go to "Free Studey Tools - Access

Page xvi Correct my e-mail in preface- replace harman@cl.uh.edu with harman@uhcl.edu

Page 57 at top Angle is $5\pi/4 + \pi/4 = 3\pi/2$ but principal angle is $-\pi/2$.
   angle((-1-i)*(1+i)) = -1.5708 = $-\pi/2$
   (-1-i)*(1+i) ans = 0.0000 - 2.0000i

Page 183 - Add the I after a_0.

   then the matrix equation is

$$A^n + a_{n-1}A^{n-1} + \cdots + a_1 A + a_0 I = 0.$$

Corrections to Advanced Engineering Mathematics with MATLAB- 2nd Page 2

Page 185 - Change λ_1 to λ_2 in the second line of Equation 4.54; change λ_1 to λ_n in the last line of Equation 4.54.

$$
\begin{aligned}
f(\lambda_1) &= \beta_{n-1}\lambda_1^{n-1} + \cdots + \beta_1\lambda_1 + \beta_0, \\
f(\lambda_2) &= \beta_{n-1}\lambda_2^{n-1} + \cdots + \beta_1\lambda_2 + \beta_0, \\
&\vdots \\
f(\lambda_n) &= \beta_{n-1}\lambda_n^{n-1} + \cdots + \beta_1\lambda_n + \beta_0.
\end{aligned}
\tag{1}
$$

Page 196, Figure 4.4: m_1 in the cart on the right should be m_2

Corrections to Advanced Engineering Mathematics with MATLAB- 2nd Page 3

Page 210 - In Theorem 5.2, third line, separate the a and b in brackets
... with continuous coefficients in the interval $[a\ b]$. Then, ...

Page 214 - In Example 5.2, change the $t = 1.1$ to $t = 1.005$ in the next to last line
... selected to start at $t = 1.005$ so that the infinite ...

Page 215 - there is an error in the Figure 5.1: "(2,?10)" should be (2,-10)

Page 238 Equation 5.65 should read

$$\mathbf{x(t)} = \mathbf{e^{At}x_0} = \mathbf{Me^{\Lambda}M^{-1}x_0},$$

Page 247 Table 5.4 (The sign is wrong in the equation for $\mathbf{\dot{x}_p}(t)$). The function in column 2 should be:

$$\dot{\mathbf{x}}_p(t) = A\mathbf{x_p}(t) - \mathbf{f}(t).$$

Page 259 MATLAB Script comment should read

```
D2y+2*z*Wn*Dy+Wn^2*y=9.81*U(t)
```

Page 281 Shift the text in the MATLAB script over to the left - some text is cut off.

Page 287

$$\lim_{n\to\infty} \left| \frac{a_{n+1}}{a_n} \right| \qquad \text{not} \qquad \lim_{n\to\infty} \left| \frac{a^{n+1}}{a_n} \right|.$$

$$\lim_{n\to\infty} \left| \frac{a_{n+1}}{a_n} \right| = \lim_{n\to\infty} \left| \frac{2}{n+1} \right| = 0.$$

Page 299 last line: Replace "disk" with "Web site"
... using the MATLAB M-file EX6_7.M on our Web site leads to the following results:

Page 323 Example 6.14 first line: Replace "constant" with "nonconstant"
... differential equation with nonconstant coefficients

Page 407 in MATLAB program Example 8.14 Correct transform of system

```
H = 1./(sqrt(w.^4 + 5*w.^2 +4))
```

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Corrections to Advanced Engineering Mathematics with MATLAB- 2nd Page 4

Page 430 in Example 9.5: add the factor e^{-t}

$$y(t) = \frac{1}{2} + \frac{1}{2}\sqrt{2}\cos\left(t + \frac{\pi}{4}\right)e^{-t}.$$

Page 484 Equation 10.47 *Suppose that* $\mathcal{Z}[f(n)] = F(z)$, *then*

$$\mathcal{Z}[f(n+N)] = z^N F(z) - f(0)z^N - f(1)z^{N-1} - \cdots - f(N-1)z$$

Page 505; Replace $y(z)/z$ with $Y(z)/z$
Analytically, $Y(z)/z$ could be written in terms ...

Page 527. The resolution is 1 Hertz (not 2 Hz) since

$$Tperiod = N\,Ts = 1 \text{ second so that } \Delta f = 1 \text{ Hz}$$

Page 532 Line after Equation 11.15: Replace n with N.
where p takes the values $0, 1, \ldots, N-1$.

Page 544 W_8^6 not W_6^6