Changes for the 3rd printing of *A Friendly Intro. To Analysis* Second Edition, by Witold A. J. Kosmala (updated Oct. 1, 2010)

On p. xi, in line 16, change "single-" to "single".
On p. xi, in line 10 from the bottom, change ""Why?"" to " "Why?"".
On p. 2 in the middle of the page, the 3rd D should be written as $D = \{x \mid x \text{ and } x+1, \text{ or } x \text{ and } x-1 \text{ are prime numbers}\}$.
On p. 31, in Exercise 7(f), change "$a_{n+1} = \left[1 - \frac{1}{(n+1)^2}\right]$" to "$a_{n+1} = \left[1 - \frac{1}{(n+1)^2}\right] a_n$".
On p. 33, Example 1.4.2 should read as follows, "If b is an integer such that b^2 is odd, prove that b is odd.
On p. 35, Exercise 2 should read as follows, "Prove that if q is an integer such that q^2 is divisible by 3, then so is q.
On p. 51, add a period after $x = 1$ on the bottom line.
On p. 77, in the first line of the paragraph just before Example 2.2.2, replace the second "is" by "can sometimes be".
On p. 78, the paragraph right before Theorem 2.2.6 should read as follows: "The following theorems, which conclude this section, serve as very useful tools throughout the text. Examples of their application are given as exercises."
On p. 78, third line from the bottom, replace "b_n is between a_n and c_n" by "$a_n \le b_n \le c_n$".
On p. 80, in Exercise 17, the second sentence should read as "Find the limit of $\{s_n\}$ by *telescoping the sequence* to just a few terms, the method that could have also been used in Exercises 15 and 16."
On p. 83, in the last line of the proof of Example 2.3.5, change the last "if" to "for all".
On p. 87, in Exercise 14, in the limit, change "B" to "β".
On p. 110, delete all text above the Exercises 2.6.
On p. 110, in Exercise 2(c), change "0" to "-1".
On p. 110, in Exercise 5 should read as "Prove that every unbounded above sequence contains a monotone subsequence that diverges to plus infinity."
On p. 110, add the following 3 exercises.

9. Use subsequences to find the limit of the sequence $\{a_n\}$ with a_n as given
   (a) $a_n = \sqrt[n]{c}$, with any constant $c \in (0,1)$. (See Exercise 14 from Section 2.1.)
   (b) $a_n = r^n$, with any constant $r \in (0,1)$. (See Exercise 2(c) above and Theorem 2.1.13.)
   (c) $a_1 = 1$ and $a_{n+1} = \sqrt{2a_n}$ for all $n \in N$. (See Exercise 11(c) of Section 2.4.)

10. Complete the proof in Example 2.6.6.

11. Complete the proof in Theorem 2.6.4.

On p. 118, in Definition 3.1.2, between words "then" and "the", add the following: "f has a *horizontal asymptote at* $+\infty$ and".
On p. 118, in the first sentence after Definition 3.1.2, add "asymptote" as the last word.
On p. 118, Example 3.1.3 should read as follows: "Assume $D = \Re \setminus Q$ and $f : D \to \Re$ be a function defined by $f(x) = \frac{x}{x+2}$. Verify that $\lim_{x\to\infty} \frac{x}{x+2} = 1$." In the proof of Example 3.1.3 change "Q^+" to "$\Re \setminus Q$" in two places.
On p. 121, two lines above Definition 3.1.10, change "integers" to "natural numbers".
On p. 123, 3 lines above Exercises 3.1 begin, change the ward "diverge" to "tend".
On p. 126, delete everything above Definition 3.2.1.
On p. 126, in Figure 3.2.1, fill in the point $(a, f(a))$ and make the vertical line above $a + \delta$ dotted.
On p. 132, Exercise 8, instructions should say "Find the given limits, if possible, and then …".
On p. 138, in the last sentence of the section, remove the ward "that".
On p. 141, in Exercise 19, change "$\{a_n\}$ converges" to "$\{a_n\}_{n=2}^{\infty}$ converges and prove your result".
On p. 142, in Exercise 21, add to the sentence ", where $x \in \Re$"
On p. 158, in part (b) of Definition 4.2.3, change "$a \notin D$" to "$a \in D$".

On p. 174, in part (c) of Exercise 5, delete what is in the parentheses.
On p. 187 in Example 5.1.8, change " $x = a$ " to " $x = 0$".
On p. 224 in last line change $\sqrt[x]{x}$ to $x^{\frac{1}{x}}$.
On p. 225 in Exercise 1(n) change $\sqrt[x]{x}$ to $x^{\frac{1}{x}}$.
On p. 226 in Exercise 7 change $\sqrt[x]{x}$ to $x^{\frac{1}{x}}$.
On p. 227 in Exercise 12 change $\sqrt[x]{a}$ and $\sqrt[x]{b}$ to $a^{\frac{1}{x}}$ and $b^{\frac{1}{x}}$.
On p. 251, in the first sentence after Theorem 6.3.2, change "changed to $<$, $>$, or $\geq$." to "changed to $\geq$."
On p. 271, in Exercise 9, change the last ward "finite" to "convergent".
On p. 305, in part (a) of Theorem 7.2.4 change " $\geq$" to " $\leq$".
On p. 317, the last ward is "series".
On p. 344, in the 3rd line in Proof of part (b), change "converges to 1 sufficiently fast. Suppose that" to "converges to 1, say,".
On p. 361, in the 3rd line, the answer to part (b) should start with: " The series converges when $x = 1$. Why? If $x \neq 1$, let … "
On p. 362, add "that are small enough" to the last sentence before Theorem 8.5.9.
On p. 363, in parts (a) and (b) of Theorem 8.5.12, change the end of the lines from "for any $\varepsilon_1 > 0$" to "for any small enough $\varepsilon_1 > 0$" and from "for any $\varepsilon_2 > 0$" to "for any small enough $\varepsilon_2 > 0$".
On p. 383, heading for the Section 9.1 three lines from the bottom should have $\Re^3$ instead of $\Re^2$.
On p. 386, in first line, change to $\vec{k} = \langle 0,0,1 \rangle$.
On p. 387, capitalize the first word in the last paragraph.
On p. 404, in first line, change $\overrightarrow{P_0P}$ to $\overrightarrow{P_0P_1}$.
On p. 404, in indented line 6, change $-8x + 13y + 3k$ to $-8x + 13y + 3z$.
On p. 406, in tenth line from the bottom, change $-L_1$ to $=L_1$.
On p. 408, in 12th line from the bottom, add " $\vec{r}(t)$" between the words "if" and "represents".
On p. 410, two lines above Theorem 9.6.10, change the sentence "Clearly, $\vec{v}$ has no tangent line when $t = 0$." to "Clearly, $\vec{v}$ has no tangent line when $t = 0$, and a particle traveling along this curve would be at a stand-still when $t = 0$."
On p. 416, in the 5th line from the bottom, there should be " $\vec{r}'(t)$" inside the integral instead of " $\vec{r}(t)$".
On p. 417, in the 3rd line from the top, there should be " $\vec{r}'(t)$" inside the integral instead of " $\vec{r}(t)$".
On p. 418, last line before Example 9.7.5, change "See Exercise 15." to "See Exercise 10 in Section 9.8."
On p. 434, in the proof of part (a) of Theorem 10.1.4, change "leastone" to "least one".
On p. 449, 2nd line above Example 10.3.2, change "ration" to "ratio".
On p. 452, in the second line, change "very like" to "very much like".
On p. 458, change the sentence above Definition 10.4.3, to: "When f is differentiable, then the total derivative $\vec{m}$ is given by the gradient, which is defined next."
On p. 460, in the proof of Theorem 10.4.6, in line 5, capitalize p.
On p. 460, in Exercise 1, part (c), change "have vertical" to "have a vertical".
On p. 465, in Theorem 10.6.1, change $\frac{dz}{df}$ to $\frac{dz}{dt}$.
On p. 485, in the proof of Lemma 11.2.1, change $U(P_1, f)$ to $U(P_1, g)$, and change $L(P_1, f)$ to $L(P_1, g)$.
On p. 503, remove the last "is" in the footnote.
On p. 517 in Exercise 8 change "asteroid" to "astroid".
On p. 536, in Exercise 10, change "part (f)" to "part (c)".
On p. 538, change part (h) of Exercise 11 to: "Since the sequence is decreasing and bounded below by 0, it is convergent. However, taking limits of the recursion formula will not give the value of the limit. See Exercise 7(f) … ".
On p. 543, answer to Exercise 20(b) in Section 5.4 should be actually 20(c). Corrected answer is

" $p_n(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots + (-1)^{n/2} \frac{x^n}{n!}$, $n = 0,2,4, \ldots$;".

On p. 552, answer to Exercise 4 in Section 9.1 should be " $2x - 2y - 14z = -23$".

On p. 558 in Section 11.5 remove answers to Exercises 11 and 12.
On p. 560, add a lower case eta.
On p. 574, change “Witch of Agnesi, 340” to “Witch of Agnesi, 340, 401”.