

## Errata and updates for ASM Exam 3L (Tenth Edition Second Printing) sorted by date

Note the change to Practice Exam 5:9.

[2/12/2012] On page 732, in question 39.8, on the second line from the end of the question, change  $i$  from 0.025 to 0.03.

[2/5/2012] On page 171, in Table 12.1, replace the enumerated list in the second bullet with:

1.  $(0, S^2(n-1)/w_\alpha)$ .
2.  $(S^2(n-1)/w_{1-\alpha}, \infty)$ .
3.  $(S^2(n-1)/w_{1-\alpha/2}, S^2(n-1)/w_{\alpha/2})$ .

[1/30/2012] On page 382, in exercise 24.4, answer choice B. should be 375.

[1/23/2012] On page 373, in the solution to Quiz 23-1, on the second displayed line, replace  $A_{30:\overline{10}|}$  with  $A_{30:\overline{10}|}$ .

[1/7/2012] On page 337, in exercise 22.29, on the last line, put a period after 97.5.

[12/27/2011] On page 441, in the solution to question 26.21, on the third displayed line, remove the negative sign at the start of the line.

[12/20/2011] On page 239, in the solution to exercise 17.6, the second sentence is cut off and should read

It's the usual CAS type of humor—it's not that the answer cannot be determined from the given information (almost never the right answer choice), rather there is too much information provided.

[12/17/2011] On page 6, on the first line of Section 1.3,  $\Pr(B \neq 0)$  should be  $\Pr(B) \neq 0$ .

[11/3/2011] On page 44, in the solution to question 3.14, on the second displayed line, change 100 to 300.

[10/27/2011] On page 194, in the solution to exercise 13.16, on the first line, change  $\frac{1}{\sqrt{10}}$  to  $\frac{1}{10}$ .

[10/22/2011] On page 817, in the solution to exercise 43.17, on the first line, replace  $q_x q_y$  with  ${}_t q_x {}_t q_y$ .

[10/18/2011] On page 1139, in the solution to question 21, a continuity correction should be applied. On the third line, replace "Then..." until the end of the solution with

A continuity correction is applied; if 15 widgets were observed to be defective, we could ask for the probability that the number defective is greater than any number between 14 and 15, so we'll use 14.5. Then

$$1 - \Phi\left(\frac{15.5 - 10}{3.146}\right) = 1 - \Phi(1.430) = 1 - 0.924 = 0.076$$

Since it is a two-sided test, we double 0.076 to get **0.152**. (E)

[10/17/2011] On page 1142, in the solution to question 4, on the first displayed line, change  $g(\theta)$  to  $g(a)$ . On the second displayed line, changed  $\frac{dg}{d\theta}$  to  $\frac{dg}{da}$ .

[10/12/2011] On page 1213, in the solution to question 8, on the last line of the page, change + to -. On the second line of page 1214, change + to -.

[10/5/2011] On page 756, in exercise 40.18(i), "full" should be "fully". Also, the first column of the table represents the number of survivors on July 1, 2009.

- [10/5/2011] On page 784, in the solution to exercise 41.23, on the third line, change  $\pi_{45}$  to  $\pi_{19}$ .
- [10/3/2011] On page 241, in the solution to exercise 17.15, on the second line, in the last two symbols,  $q$  should not be in the subscript. Change them to  ${}_1q_0$  and  ${}_2q_0$ .
- [9/27/2011] On page 11, in the solution to exercise 1.3, on the first displayed line, change  $E[X + Y]^3$  to  $E[(X + Y)^3]$ .
- [9/27/2011] On page 133, in the solution to exercise 8.28, on the first displayed line, change 0.9 to 0.1.
- [9/27/2011] On page 332, in Table 22.1, on the line for  ${}_s p_x \mu_{x+s}$ , in the Constant force of mortality column, place a negative sign before the expression.
- [9/27/2011] On page 867, in exercise 46.23, replace the first sentence with  
For two independent lives, (30) and (50), a continuous life annuity pays 100 per year to (50) after the death of (30), but only until (50) reaches age 80.
- [9/27/2011] On page 1139, in the solution to question 24, change the numerator 6 to 60 on the second to last line, and change the final answer from 582.3 to 582.0.
- [9/8/2011] On page 553, on the 4th line of the second paragraph, change 14/5 to 14/6.
- [8/30/2011] On page 141, in the solution to exercise 9.6, on the first line, replace 1.644 with 1.6269 and 7.301 with 7.3759.
- [8/15/2011] On page 477, in Quiz 28-1, the values given are impossible, since the resulting 10-year pure endowment of 0.6 is greater than  $e^{-10\delta}$ . Therefore, change  $\bar{A}_{60}$  to 0.42.
- [8/15/2011] On page 490, revise the solution to Quiz 28-1 in line with the revised value of  $\bar{A}_{60}$  given above:  
Since  $\bar{A}_{50} = \bar{A}_{50:\overline{10}|}^1 + {}_{10}E_{50} \bar{A}_{60}$ , we have  ${}_{10}E_{50} = (0.22 - 0.01)/0.42 = 0.5$ . Then  $\bar{A}_{50:\overline{10}|} = 0.01 + 0.5 = 0.51$ . Also, since  $\bar{A}_x = 1 - \delta \bar{a}_x$ , we have  $\delta = (1 - 0.22)/13 = 0.06$ . Therefore
- $$\bar{a}_{50:\overline{10}|} = \frac{1 - \bar{A}_{50:\overline{10}|}}{\delta} = \frac{1 - 0.51}{0.06} = \boxed{8\frac{1}{6}}$$
- [8/15/2011] On page 705, on the third displayed line below Table 38.2, change the denominator to  ${}_{h-k}P_{x+k:\overline{n-k}|}^1$  and change  $h < k$  to  $k < h$ .
- [7/29/2011] On page 890, delete SOA M-F06:24 from the list of additional released exam questions.
- [7/29/2011] On page 1200 in the solution to question 27, on the first line,  $\mu_{50}^{(1)}$  should be  $\mu_{50}^{(1)}(t)$ .
- [7/29/2011] On page 1226, in the solution to question 1, on the second displayed line,  $q_{45}$  should be  $q_{45}^{(s)}$ .
- [7/28/2011] On page 463, in the list of additional released exam questions, delete the “,35” in “M-S05:15,35”.
- [7/28/2011] On page 514, in the list of additional released exam questions, remove SOA M-F06:4.
- [7/28/2011] On page 540, add SOA M-F06:4 to the list of additional released exam questions.
- [7/28/2011] On page 619, in the list of additional released exam questions, add “,35” after “M-S05:8,14”
- [7/28/2011] On page 1119, in the answer to question 12, the answer key should be E. Correct the answer key on page 1116 as well.
- [7/28/2011] On page 1198, in the solution to question 15, on the fifth line, remove the line from the presubscript of  ${}_9p_{40}$  at the end of the line, so that it becomes  ${}_9p_{40}$ . Make the same correction four lines from the end of the solution.
- [7/28/2011] On page 1281, the lesson number for SOA Spring 2005 question 35 should be 33 instead of 27. The lesson number for SOA Fall 2006 question 4 should be 30 instead of 29. SOA Fall 2006 question 24 should be NS. The lesson number for SOA Spring 2007 question 29 should be 28 instead of NS.

[7/27/2011] On page 500, on the first line of the answer to Example 29G, change “second” to third. It is referring to the equation one line above Example 29G.

[7/27/2011] On page 527, the first sentence of the fifth paragraph (starting with “If  $I = 1$ ”) skips a step. Replace it with these two sentences:

If  $I = 1$ ,  $Y | I$  is  $v^n$  times a whole life annuity on  $(x + n)$ , and we know the expected value and variance for this annuity; the expected value is  $\bar{a}_{x+n}$  and the variance is  $({}^2\bar{A}_{x+n} - \bar{A}_{x+n}^2)/\delta^2$ . Therefore,  $E[Y | I] = v^n \bar{a}_{x+n}$  and  $\text{Var}(Y | I) = v^{2n}({}^2\bar{A}_{x+n} - \bar{A}_{x+n}^2)/\delta^2$ .

[7/26/2011] On page 1289, in the solution to question 24, on the last displayed line, change  $\frac{1}{20} = 0.05$  to  $\frac{6}{20} = 0.30$ .

[7/22/2011] On page 136, in the solution to Quiz 8-1, on the second line, change 35 to 25 and 36 to 26.

[7/20/2011] On page 55, on the last line of the answer to Example 4H, change 0.02 to 0.05 and change the final answer to 4.

[7/15/2011] On page 630, the solution to exercise 33.38 is incorrect. Replace the part starting with “The present value of the refund of premium. . .” to the end with the following, which also includes an easier method:

The present value of the refund of premium benefits, since the premiums are refunded with interest, is the present value of the premiums themselves. If death occurs in year  $k$ , the premiums up to that time are a  $k$ -year certain annuity-due. So the present value of the refund of premium benefits is

$$\begin{aligned} \text{PV Refund} &= 0.5\pi \sum_{k=1}^{10} {}_{k-1|}q_{20} \ddot{a}_{\overline{k}|} \\ &= 0.5\pi \sum_{k=1}^{10} 0.01(0.99^{k-1}) \left( \frac{1 - 1/1.05^k}{0.05/1.05} \right) \\ &= 0.005(21)\pi \left( \sum_{k=1}^{10} 0.99^{k-1} - \frac{1}{1.05} \sum_{k=1}^{10} \left( \frac{0.99}{1.05} \right)^{k-1} \right) \\ &= 0.105 \left( \frac{1 - 0.99^{10}}{1 - 0.99} - \frac{1}{1.05} \left( \frac{1 - (0.99/1.05)^{10}}{1 - 0.99/1.05} \right) \right) = 0.225609 \end{aligned}$$

Equating the premiums with the benefits,

$$\begin{aligned} 7.78379\pi &= 9716.212 + 0.225609\pi \\ \pi &= \frac{9716.212}{7.78379 - 0.225609} = \boxed{1285.523} \end{aligned}$$

An easier way to solve this question is to equate the accumulated premiums at time 10 to the present value of the annuity, 17,500. The nonrefundable premiums are accumulated with mortality and interest, and the refundable premiums are accumulated with interest only, so

$$\pi = \frac{17,500}{0.5(\ddot{s}_{20:\overline{10}|} + \ddot{s}_{\overline{10}|})}$$

We computed  $\ddot{a}_{20:\overline{10}|}$  above, and accumulating with mortality and interest,

$$\ddot{s}_{20:\overline{10}|} = 7.78379 \left( \frac{1.05^{10}}{0.99^{10}} \right) = 14.01949$$

while

$$\ddot{s}_{\overline{10}|} = \frac{1.05^{10} - 1}{0.05/1.05} = 13.20679$$

so the premium is  $17,500 / (0.5(14.01949 + 13.20679)) = \boxed{1285.523}$ .

[7/14/2011] On page 592, in the solution to exercise 32.8, on the second displayed line, change  ${}_5E_x$  to  ${}_{10}E_x$ .

[7/13/2011] On page 134, in the solution to exercise 8.31, on the third displayed line, there should be  $\frac{1}{2}$  after the integral sign. On the fourth displayed line, there should be  $\frac{1}{2}$  before  $e^{-(u-\theta)}$ , and the upper limit should be  $x$  instead of  $u$ . With these corrections, the two lines read:

$$\begin{aligned} F(x) &= F(\theta) + \int_{\theta}^x \frac{1}{2} e^{-(u-\theta)} du \\ &= \frac{1}{2} - \frac{1}{2} e^{-(u-\theta)} \Big|_{\theta}^x \end{aligned}$$

[7/11/2011] On page 543, in the solution to exercise 30.10, on the 3rd and 2nd lines from the bottom of the page, change 1250 to 125. On the last line, change 625 to 62.5.

[6/30/2011] On page 46, in the solution to exercise 3.19, on the first line of the page, delete the first  $1/\theta$ .

[6/21/2011] On page 668, in the caption for Figure 36.2, change fuction to function.

[6/15/2011] On page 532, in Table 30.1, formula (30.12) should have  $d$  instead of  $d^2$  in the denominator.

[6/7/2011] On page 349, on the fourth line, delete “actuarial”.

[6/7/2011] On page 430, on the sixth line, delete “actuarial”.

[6/6/2011] On page 477, on the third line of the paragraph beginning “Whole life”, replace the expression  $e^{-(\delta + \mu_x(t))}$  with  $e^{-(\delta t + \int_0^t \mu_x(u) du)}$ .

[6/6/2011] On page 486, in the solution to exercise 28.5, on the third line, replace  $\mu$  with  $k + \mu_{x+t}$ .

[6/3/2011] On page 263, in the solution to exercise 18.37, on the last two displayed lines, add a right parenthesis before the last equals sign on each line.

[6/3/2011] On page 415, in the solution to exercise 25.17, on the second line, remove the bar from  ${}^2\bar{A}_x$ .

[6/3/2011] On page 436, in the solution to exercise 26.1, on the second line, change the second  $v_{10}$  to  $v_t$ .

[5/29/2011] On page 13, in the solution to exercise 1.9, 7 lines from the end, change  $\frac{3}{2}(7500)$  to  $\frac{2}{3}(7500)$ .

[5/29/2011] On page 25, in the solution to exercise 2.8, at the end, delete (C), since the question is not multiple choice.

[5/4/2011] On page 1140, in the solution to question 25, on 6, 4, and 3 lines from the end, replace 1.96 with 1.645. 3 lines before the end, there are several errors; the line should read

$$\sqrt{x} = \frac{-1.645\sqrt{18.25} \pm \sqrt{(1.645^2)(18.25) + 4(18.25)(499.5)}}{2(18.25)} = 5.04, -5.43$$

[4/29/2011] On page 1050, in question 9 statement 3, change  $H_1: \sigma_X^2 \neq \sigma_Y^2$  to  $H_1: \sigma_X^2 > \sigma_Y^2$ .

[4/17/2011] On page 527, in the third displayed formula of the page, change  ${}_n|\bar{a}_{\overline{n}|}$  to  ${}_n|\bar{a}_{\overline{n}|}$ .

[4/10/2011] On page 1201, in the solution to question 38, on the second line, change the second denominator to  $1.06^2$ .

[4/8/2011] On page 822, in the fourth displayed equation of the page, change the condition  $T(xy) > a$  to  $T(y) > a$  and the condition  $T(xy) \leq a$  to  $T(y) \leq a$ .

[4/3/2011] On page 169, in the enumerated list of confidence intervals:

1. At the very end of 1., change  $w_{1-\alpha}$  to  $w_\alpha$ .
2. At the very end of 2., right before  $, \infty$ , change  $w_\alpha$  to  $w_{1-\alpha}$ .
3. The confidence interval at the end of 3. should be  $(S^2(n-1)/w_{1-\alpha/2}, S^2(n-1)/w_{\alpha/2})$ .

[4/3/2011] On page 719, in the solution to exercise 38.6, at the end of the second sentence of the first bullet, change “, or 1/5” to “is 1/5”.

[4/1/2011] On page 790, one line below the second-to-last displayed line, change  $\Pr(T(xy)) > t$  to  $\Pr(T(xy) > t)$ .

[4/1/2011] On page 822, 2 lines above equation (44.3), change  ${}_ap_{xy}$  to  ${}_ap_y$  and  ${}_aq_{xy}$  to  ${}_aq_y$ .

[3/28/2011] On page 825, in the answer to Example 44H, change the highlighted number (fifth line) from 400 to 200.

[3/28/2011] On page 985, in the solution to exercise 53.1, 2 lines from the end, delete the word “at” before “exactly”.

[3/28/2011] On page 1124, the answer key for question 5 should be E.

[3/28/2011] On page 1190, the answer key to question 24 should be (D) instead of (C). The answer key on page 1183 should be corrected as well.

[3/28/2011] On page 1277, replace the last line of the solution to question 15 with

The reserve per survivor is 0.13661, and under de Moivre  ${}_{10}p_{60} = 0.75$ , so 750 policies are expected to survive and the expected reserve is  $750(0.13661) = \boxed{102.46}$ . (A)

The CAS answer key has (D) as the answer. Apparently, they multiplied 0.13661 by the 1000 original purchasers, obtaining 136.61. However, reserves are conditioned on survival to the duration of the reserve, so the CAS answer is not correct.

[3/22/2011] On page 822, in equation (44.3), change  $(1 - \frac{a}{2})$  to  $(1 - \frac{a}{b})$ .

[3/12/2011] On page 690, on the first line of Section 38.2, delete the second “the”.

[3/12/2011] On page 706, on the first line of Section 38.2, delete the second “the”.

[3/11/2011] On page 1007, in Example 55D, on the second line, change 1100 to 1600.

[3/9/2011] On page 535, in exercise 30.10(iii), change 125 to 1250.

[3/7/2011] On page 816, in the solution to exercise 43.6, the final answer should be 0.086538.

[3/3/2011] On page 415, in the solution to exercise 25.17, on the 6th line,  $A_{25:\overline{5}|}$  should be  $A_{25:\overline{5}|}^1$ .

[2/26/2011] On page 369, in the solution to exercise 23.18, on the first line, put parentheses around  $\mu + \delta$ .

[2/26/2011] On page 759, in the solution to exercise 40.4, on the second and third displayed lines of the page, replace 0.379487 with 0.017446. On the third displayed line of the page, replace 0.415487 with 0.053446. On the second line from the end, replace 0.2656 with 0.0396. On the last line, replace the equation with  $0.053446/0.0396 = \boxed{1.3497}$ .

[2/25/2011] On page 368, in the solution to exercise 23.14, on the second displayed line, change  ${}_{12}E_x$  to  ${}_{12}E_x$ . On the third displayed line, change the denominator from  $0.10 + 0.20$  to  $0.10 + 0.10$ .

[2/25/2011] On page 914, in the solution to Quiz 48-1, on the first displayed line, put a superscript ( $\tau$ ) on  ${}_5p_{60}$ :  ${}_5p_{60}^{(\tau)}$ .

[2/23/2011] On page 910, in the solution to exercise 48.13, five lines from the end, change  $e^{-0.015}$  to  $e^{-0.15}$ .

[2/22/2011] On page 229, on the last line, change  ${}_tq_x$  to  ${}_tq_x$ .

[2/22/2011] On page 809, in Table 43.1, add minus signs on the left of lines 4 and 8.

[2/22/2011] On page 824, on the third line of the answer to Example 44E, change  $\omega = 50$  to  $\omega - x = 50$ .

[2/18/2011] On page 697, in the solution to exercise 37.11, on the second-to-last line, change  $P_{45:\overline{10}}^1$  to  $P_{40:\overline{10}}^1$ .

[2/17/2011] On page 723, in the solution to exercise 38.16, replace the last two lines with

The accumulated cost of insurance, since no insurance is provided in the first 10 years, is  $q_{50}/p_{50} = 0.04/0.96 = 0.041667$ . The retrospective reserve is  $0.627969 - 0.041667 = \mathbf{0.586302}$ .

[2/16/2011] On page 786, in the solution to exercise 41.34, on the last line of the first paragraph, change  $q_{x+2}$  to  $q_{x+1}$ .

[2/14/2011] On page 653, 3 lines above equation (35.5), change  ${}^2i = i + i^2$  to  ${}^2i = 2i + i^2$ .

[2/14/2011] On page 874, the solution to exercise 46.23 is incorrect. The correct solution is

The expected present value of one unit of this reversionary annuity is

$$\bar{a}_{30|50:\overline{30}} = \bar{a}_{50:\overline{30}} - \bar{a}_{30:50:\overline{30}}$$

Let's calculate the two annuities.

$$\begin{aligned}\bar{a}_{30:50:\overline{30}} &= \frac{1 - e^{-0.085(30)}}{0.005 + 0.03 + 0.05} = 10.84610 \\ \bar{a}_{50:\overline{30}} &= \frac{1 - e^{-0.08(30)}}{0.03 + 0.05} = 11.36603\end{aligned}$$

The answer is  $100(11.36603 - 10.84610) = \mathbf{51.99}$ .

[2/11/2011] On page 716, in exercise 38.16(iii),  $\ddot{a}_{40}$  should be  $\ddot{a}_{40:\overline{10}}$ .

[2/11/2011] On page 722, in the solution to exercise 38.16, on the last line of the page, change the last denominator from  $1 - 0.7$  to  $1 - 0.3$ .

[2/10/2011] On page 698, in the solution to exercise 37.14, on the second to last line, change "is paid" to "are paid".

[2/9/2011] On page 673, on the last four lines of the answer to Example 36J, the exponents should be  $\delta/\mu$  instead of  $\mu/delta$ . Make four corrections, one on each line.

[2/7/2011] On page 411, in exercise 25.39, 2–3 lines under the table, replace the sentence "In this group ..." with "This group is drawn from a population in which 80% are non-smokers and 20% are smokers".

[2/6/2011] On page 648, on the last line of the solution to exercise 34.6, in the first symbol in the numerator, the 0 should be inside the angle as follows:  ${}^2\bar{A}_{x:\overline{20}}$ .

[2/1/2011] On page 526, in equation (30.11), delete the first left parenthesis.

[1/24/2011] On page 423, 3 lines from the bottom, change  ${}_5E_{45}$  to  ${}_5^2E_{45}$ .

[1/20/2011] On page 178, in the solution to exercise 12.18, replace the last sentence with

Since  $S_2^2/S_1^2 = 1.75/0.75 = 2.33$ , the null hypothesis is accepted even at 5%, and certainly at 1%, significance.

[1/13/2011] On page 534, in exercise 30.8(iii), replace 420 with 240.

[1/13/2011] On page 534, in exercise 30.9(iii), replace 448 with 288.

[1/13/2011] On page 542, in the solution to exercise 30.7, replace the right-hand sides of the last 3 lines as follows: replace 240 with 400; replace 4.8 with 8; replace 17.4 with 19.

[1/13/2011] On pages 542–543, in the solution to exercise 30.8, replace the first 4 displayed lines with

$$\text{Var}(Y) = \frac{2(\bar{a}_x - {}^2\bar{a}_x)}{\delta} - \bar{a}_x^2$$

$$\begin{aligned} \mathbf{E}[Y^2] &= \frac{2(\bar{a}_x - {}^2\bar{a}_x)}{\delta} \\ 240 &= \frac{2(15 - {}^2\bar{a}_x)}{0.05} \\ 12 &= 2(15 - {}^2\bar{a}_x) \\ {}^2\bar{a}_x &= 9 \end{aligned}$$

[1/13/2011] On page 543, in the solution to exercise 30.9, replace the 4th and 5th lines with

$$\begin{aligned} 288 &= \frac{2(15 - {}^2\ddot{a}_x)}{0.05} + {}^2\ddot{a}_x = 600 - 39({}^2\ddot{a}_x) \\ {}^2\ddot{a}_x &= \frac{312}{39} = 8 \end{aligned}$$

[1/12/2011] On page 334, in exercise 22.14, replace the last line of the question with “Calculate  $\text{Var}\left(\min\left(T(45), 2\right)\right)$ .”

[12/20/2010] On page 467, in the solution to exercise 27.18, on the last line, the first exponent is missing a parenthesis and should be  $-(\mu + \delta)$ .

[12/6/2010] On page 286, the formula for  $\text{Var}\left(T(x)\right)$  of generalized deMoivre (9th formula) should have  $\alpha$  in the numerator:  $\frac{\alpha(\omega - x)^2}{(\alpha + 1)^2(\alpha + 2)}$ .

[12/6/2010] On page 298, in the solution to exercise 20.26, in the second bullet, replace  $\omega - 10$  with  $\theta - 10$ .

[12/6/2010] On page 378, on the fourth line of the answer to Example 24D, before the comma, add “divided by 0.16”.

[12/6/2010] On page 430, three lines above Example 26F, change  $A_{x+t}$  to  $\bar{A}_{x+t}$ .

[12/6/2010] On page 431, in the answer to Example 26H, on the first line change  $x > 20$  to  $t > 20$ . On the last three displayed line, change each  $x$  (one on each line) to  $t$ .

[12/6/2010] On page 446, one line above Example 27B, delete “on”.

[12/6/2010] On page 463, in the solution to exercise 27.2, on the fifth and sixth lines, change 7,533,984 to 7,533,964. On the sixth and seventh lines, change 0.962947 to 0.962945. On the eighth and ninth lines, change 0.873422 to 0.873420.

[11/11/2010] On page 280, 3rd line of answer to Example 20B part 2, equation (20.2) should be equation (20.6).

[11/11/2010] On page 345, in the solution to exercise 22.27, on the first displayed line, change  $e^{\mu x}$  to  $e^{-\mu x}$ . On the second displayed line, change  $e^{\mu_{x+1}}$  to  $e^{-\mu_{x+1}}$ .

[11/11/2010] On page 446, first line, change “a a” to “as a”.

[11/11/2010] On page 471, in the solution to Quiz 27-3, on the second line, change  $A_{40:\overline{5}|}$  to  $A_{40:\overline{20}|}$ .

[11/11/2010] On page 552, in the solution to Quiz 30-2, on the last line, change the – before 18.67579 to =.

[11/11/2010] On page 579, in the solution to Quiz 31-2, on the second displayed line, change  ${}_{60}E_{10}$  to  ${}_{10}E_{60}$ .

[11/11/2010] On page 701, in the solution to Quiz 37-2, on the second displayed line, a vertical line is missing after the 10 in the numerator. The numerator should be  ${}_{10|\bar{A}}_{20}$ .

[11/11/2010] On page 727, on the second displayed line at the end, the subscript should be fixed so that the symbol is  $\ddot{a}_{x+k:\overline{n-k}|}$ .

[11/11/2010] On page 807, 1 line and 4 lines after Quiz 35-1 (once apiece), replace  $T(\overline{xy})$  with  $T(\overline{\overline{xy}})$ .

[11/11/2010] On page 923, on the 8th line, change “will not Gone” to “will not be Gone”.

[11/11/2010] On page 942, 6th line of answer to Example 50B, change “ar” to “are”.

[11/7/2010] On page 6, in Theorem 2, change  $\sum_i \Pr(B_i) = 1$  to  $\Pr(\cup_i B_i) = 1$ .