

Mathematics for Economists, Fourth Edition  
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ERRATA

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The authors would like to be notified of further errors; please email [n.rau@ucl.ac.uk](mailto:n.rau@ucl.ac.uk).

**Errors remaining in 2020 reprint**

PAGE 4, 5TH LINE FROM END For “(N)  $y = -2x + 2$ ” read “(N)  $y = 2x + 2$ ”.

PAGE 24, END For “the label M” read “the label L”.

PAGE 38, LINE 10 For “interaction” read “intersection”.

PAGE 92, LINE 10 For (5.8) read (5.7).

PAGE 94, 5TH AND 2ND LINES FROM END For (5.9) read (5.8).

PAGE 98, 4TH LINE OF PROBLEM 5–1 For  $p$  read  $\varepsilon$ .

PAGE 139, 2ND LINE AFTER STEP 3 OF EXAMPLE 2 For “the critical point (2, 2, 30)” read “the critical point (2, 30)”.

PAGE 140, LINE 4 For “If  $x = 0$ ,  $y = 2$ ” read “If  $x = 0$ ,  $y = 10$ ”.

PAGE 142, 4TH LINE FROM END For “the footnote on page 139” read “footnote 2 on page 138”.

PAGE 152, FIGURE 8.10 The vertical intercept of the curve MC should be 111, not 110.

PAGE 182, FIGURE 10.1  $x_0$  should be  $a$ , twice in each panel.

PAGE 237, 12TH LINE OF SECTION 12.4 “if and only if the matrix is singular”.

PAGE 254, LINE 3 For “Exercise 13.3.3” read “Exercise 13.3.1”.

PAGE 275, 7TH LINE FROM END For 61.10 read 60.10.

PAGE 297, 5TH LINE FROM END For “hat” read “that”.

PAGE 322, LINES 5 AND 6 “Let  $\mathbf{x}^*$  be such a point.”

PAGE 330, EXERCISE 16,2.4 In first line of exercise, delete colon and second “that”.

PAGE 423, LINE 7 Insert “or” at beginning of line.

PAGE 424, 5TH LINE FROM END Insert “is that” after “variable”.

PAGE 448, 5TH LINE FROM END Left-hand side of equation should be

$$m \times (m - 1) \times \dots \times (m - r + 1).$$

PAGE 469, 2ND LINE FROM END For  $x^2 + y^2 \leq R$  read  $x^2 + y^2 \leq R^2$ .

PAGE 472, END For  $dt$  read  $dx$ .

PAGE 483, 7TH LINE AFTER EQUATION (22.11) For “the preceding section” read “Section 22.1”.

PAGE 488, 8TH LINE FROM END For “Replacing  $X$  by  $X - EX$  and  $X$  by  $Y - EY$ ” read “Replacing  $X$  by  $X - EX$  and  $Y$  by  $Y - EY$ ”.

PAGE 497, LINE 6 “distribution” (singular).

PAGE 498, LINE 2 For “Problem 22–3” read “Problem 21–3”.

PAGE 547, EXERCISE 24.3.4 “Using”.

PAGE 549, LINE 13 Omit “(24.9) and”.

PAGE 572, 6TH LINE FROM END For “cue” read “case”.

PAGE 587, LINE 5 Left-hand side of equation should be  $y_t$ , not  $z_t$ .

PAGE 591, LINE 22 Line should read

$$(p - 1)(q - 1) = pq - (p + q) + 1 = v - (c + v) + 1 = 1 - c > 0.$$

PAGE 597, LINE 2 For “Chapter 26” read “Chapter 28”.

PAGE 638, FOOTNOTE 9 Delete second “can”.

PAGE 644, LINES 18 AND 19 Second line of (a) should read: “In this case, the fixed point  $(x^*, y^*)$  is said to be **locally stable**.”

PAGE 669, END For (29.11) read (29.13).

PAGE 671, LINES 3 AND 4 FROM END For “Section 30.1” read “Section 29.1”.

PAGE 690, 10TH LINE FROM END For  $\lambda(t)$  read  $\mu(t)$ .

PAGE 693, 2ND LINE OF PROBLEM 30–3 For “Section 30.3” read “Section 30.4”.

PAGE 716, EXERCISE 31.4.1 For **SQ8** read “Proposition 3 of this section”.

PAGE 724, LINE 7 At end of line, “ $f_n \in B[a, b]$ ” should be “ $f_n \in C[a, b]$ ”.

PAGE 728, LINE 12 ”Compactness”.

PAGE 731, 5TH LINE FROM END At beginning of line, “Let  $x_0 \in U$ ” should read “Let  $x_0 \in X$ ”.

PAGE 736, 2ND LINE AFTER FIGURE 32.2 “Kakutani”.

## Errors corrected in 2020 reprint

PAGE 8, 9TH LINE FROM END For “where  $p = -1$ ” read “where  $p = 1$ ”.

PAGE 46, 6TH LINE FROM END Insert at end of paragraph: “The **range** of a function is the set of all the values that it can take.”

PAGE 55, LINE 2 Insert at end of paragraph: “As with functions, we define the **range** of a mapping  $f$  from  $A$  to  $B$  to be the set  $\{f(x) : x \in A\}$ ”.

PAGE 80, LINE 25 For (5.2) read (5.1).

PAGE 91, LINE 1 For “Example 7” read “Example 8”.

PAGE 241, 8TH LINE FROM END For “Problem 13–1” read “Problem 13–2”.

PAGE 378, EXERCISE 18.2.4 For “found in Exercise 18.1.2” read “found in Exercise 18.1.4”.

PAGE 395, END The last three lines should read as follows:

The first two of these properties are illustrated in Figure 19.3.  $\int_a^b k \, dx$  is the area of the shaded rectangle in the left-hand panel, which has height  $k$  and width  $b - a$ . Thus the area of the rectangle is  $k(b - a)$ , as **I1** says.

PAGE 454, LINE 3 Delete second “it”.

PAGE 481, LINE 9 The second  $G'(0)$  should be  $G''(0)$ .

PAGE 512, LINE 13 For “ $y = -b/a$ ” read “ $y = b/a$ ”.

PAGE 582, LINE 7 For “product is  $-c$ ” read “product is  $c$ ”.

PAGES 600–601 Omit sentence containing the first two lines of page 601.

PAGE 614, THIRD LINE OF PROBLEM 27–2 For “Section 23.1” read “Section 25.1”.

PAGE 650, LINE 5 For “Chapter 23” read “Chapter 25”.

PAGE 650, LINE 8 For “Section 23.3” read “Section 25.3”.

PAGE 654, FOOTNOTE 3 For “Problem 30–3” read “Problem 30–2”.

## Errors corrected in 2018 reprint

PAGE 4, 8TH LINE FROM END For “(A)  $y = x - 4$ ” read “(A)  $y = 2x - 4$ ”.

PAGE 13, FIGURE 1.9 Captions are the wrong way round.

PAGE 14, LINE 20 Omit “systeme”. The system of equations should look triangular:

$$\begin{aligned}2x + 7y + z &= 2 \\3y - 2z &= 7 \\4z &= 4\end{aligned}$$

PAGE 255, END The last two sentences should be replaced by the following:

In fact, every rotation of the  $xy$ -plane about the origin can be described by an orthogonal matrix. On the other hand, there are orthogonal  $2 \times 2$  matrices that do not represent rotations; the matrix

$$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

is an example. We shall say more about orthogonal matrices in Section 27.3.

PAGE 352, EQUATION (17.11) Second equation should be “ $x_2 = f_2(p_1, p_2, m)$ ” .

PAGE 360, LINE 22 For “the surface  $z = f(x, y)$ ” read “the surface  $z = g(x, y)$ ”.

PAGE 412, LINE 16 For “Section 22.3” read “Section 24.3”.

PAGE 447, LINE 16 Displayed equation should read  $P(A \cup B) = \frac{1}{6} + \frac{1}{6} - \frac{1}{36} = \frac{11}{36}$ .

PAGE 449, LINE 9 For  $n$  read  $m$ .

PAGE 470, END The last five lines should be replaced by the following:

Therefore  $p_n = \frac{\lambda^k}{k!} a_n b_n$ , where

$$a_n = \frac{n!}{(n-k)!(n-\lambda)^k}, \quad b_n = \left(1 - \frac{\lambda}{n}\right)^n.$$

If  $k > 0$ ,  $a_n$  is the product of the  $k$  terms  $\frac{n+1-j}{n-\lambda}$  ( $j = 1, \dots, k$ ), each of which approaches 1 as  $n \rightarrow \infty$ . If  $k = 0$ ,  $a_n = 1$  for all  $n$ . Thus in both cases  $\lim_{n \rightarrow \infty} a_n = 1$ . As  $n \rightarrow \infty$ ,  $b_n \rightarrow e^{-\lambda}$  by definition of the exponential function; hence  $a_n b_n \rightarrow e^{-\lambda}$  also. (21.10) follows.

PAGE 488, LINE 13 For “Section 13.4” read “Section 13.3”.

PAGE 495, LINE 6 For “Exercise 22.4.2” read “Exercise 22.4.3”.

PAGE 534, FIGURE 24.4 Lengths of AC and BC in right-hand panel are 2, not 1.

PAGE 546, LINE 2 For “Figure 24.8” read “Figure 24.6”.

PAGE 546, LINE 14 For “Figure 24.9” read “Figure 24.7”.

PAGE 599, LINE 9 For “eigenvector of  $\mathbf{A}$ ” read “eigenvalue of  $\mathbf{A}$ ”.

PAGE 601, LINE 14 For (27.12) read (27.9).

PAGE 601, LINE 15 For (27.11) read (27.8).

PAGE 605, LINE 4 For “Section 22.2” read “Section 24.2”.

PAGE 605, LINE 11 For “Chapter 23” read “Chapter 25”.

PAGE 605, LINE 22 AND 6TH LINE FROM END For “Section 23.3” read “Section 25.3”.

PAGE 625, 3RD LINE FROM END For “Chapter 21” read “Chapter 23”.

PAGE 632, 8TH LINE FROM END For  $\mathbf{x}(0)$  read  $\mathbf{x}^*$ .

PAGE 635, BOTTOM LINE 27 in second equation should be 25.

PAGE 640, EXERCISE 28.3.3 (B) For “Section 22.3” read “Section 25.3”.

PAGE 662, LINE 9 Delete second “by”.

PAGE 744, LINE 5 For “matrix” read “metric”.