# Typos in "Game Theory" by Maschler, Solan and Zamir, Second printing, October 2013

1. Page xx: in the middle of the page, change $u_t^i$ to $u_i^t$.

## Chapter 1

1. On page 2, Definition 1.1, points 2 and 3: change "$x_K$ to $x_{K+1}$" to "$x_k$ to $x_{k+1}$" (capital $K$ to small $k$).
2. On page 4, third paragraph, fourth line: change "rooks" to "knights".
3. On page 8, first paragraph, add to the itemized list a fourth item saying: "Did the king and the rooks of each player moved in the past (for knowing whether castling is allowed)?"

## Chapter 2

1. On page 16, the highlighted equation between Equations (2.20) and (2.21): change 100 to \$100. Do the same on the left-hand side of Equation (2.21).
2. On page 17, before Corollary 2.15: add "Recall that $A_K$ is the most preferred outcome and $A_1$ is the least preferred outcome."
3. On page 18, Equation (2.31), change $L_j$ to $L_{j-1}$.
4. On page 19, in Theorem 2.18, add the condition that $\succeq_i$ is also reflexive.
5. On page 21, in Equation (2.42), change $p_j^k$ to $p_k^j$.
6. On page 22, last line before Section 2.5, delete the brackets on the right-hand side of the equality whose left-hand side is $u_i(\widehat{L})$.
7. On page 26, in the first line of the last paragraph of Section 2.7, change the second "risk neutral" to "risk averse".

8. On page 31, Section 2.10, second line: replace “first presented in Marschak [1950] and Nash [1950a]” by “The property described in Exercise 2.13 is a strong version of the independence property described in Marschak [1950] and Nash [1950a].”

## Chapter 3

1. On page 43, Definition 3.6, second line, delete the words ”and nonempty”.
2. On page 54, line 4, change $x_i^j$ to $x_i^m$.
3. On page 55, four lines after Definition 3.25, change $u_i$ to $U_i$.
4. On page 55, last two lines, change the sentence to “The outcomes of the game are not specified as they are not needed for our discussion.”
5. On page 56, Figure 3.11, change $x^0$ to $R$.

## Chapter 4

1. On page 75, line 15, delete the words “also called rationalizability”.
2. On page 78, Figure 4.4, the utility in the entry (Scissors, Paper) should be $(1, -1)$ (Scissors wins against Paper) and the utility in the entry (Rock, Paper) should be $(-1, 1)$ (Rock loses against Paper).
3. On page 82, line 20, change “Figure 4.10” to “Figure 4.9”.
4. On page 85, Section 4.4, delete Equation (4.5) and the words “. For each $i \in N$ we will denote by” that precedes it (including the dot at the beginning of the sentence). In Equation (4.6), the leftmost $j$ should not be a subscript.
5. On page 90, in the paragraph after Assumption 4.13, delete the last 4 lines. That is, keep “Such a strategy vector is called *rational*.” and delete the rest.
6. On page 99, Example 4.22, last four line: replace the last sentence “Note that the... only 1” by “Note that the strategy ‘Produce nuclear

weapon *guarantees* each country a payoff of 2, but if both countries implement this 'safe strategy, they end up with the less favorable equilibrium with payoff (2,2)."

7. On page 100, Equation (4.18), the term $q_1 c_2$ should be $q_2 c_2$.
8. On page 116, in Equation (4.55), the subscript II should be smaller.
9. On page 116, fourth line from bottom, change (4.60) to (4.61).
10. On page 124, Equation (4.86), the "II" should be a subscript.
11. On page 129, Game D, at the root add a circle that contains the letter I.

# Chapter 5

1. On page 149, Equation (5.15), two of the subscripts are incorrect: the equation should read

$$u_i(s_1, \ldots, s_n)\sigma_1(s_1)\sigma_2(s_2)\cdots\sigma_{i-1}(s_{i-1})\sigma_{i+1}(s_{i+1})\cdots\sigma_n(s_n).$$

2. On page 151, line seven from bottom, change the first word "maximum" to "minimum".
3. On page 153, line 17, change "the maximum of" to "the maximum in the expression". On line 18 change "the minimum of" to "the minimum in the expression".
4. On page 155, third line, change "Figure 5.4" to "Figure 5.5".
5. On page 160, in the highlight equation between Equation (5.43) and (5.44), delete the comma from $\sigma_i'(t_i)$ on the left-hand side, and change $\sigma_i(t_i)$ to $\sigma_i^*(t_i)$ on the top line on the right-hand side. In Equation (5.45), change $\sigma_i(\widehat{s}_i)$ to $\sigma_i^*(\widehat{s}_i)$. In Equation (5.46), change $\sigma_i(s_i)$ to $\sigma_i^*(s_i)$.
6. On page 160, after the proof of Theorem 5.18, add the following:

   The Indifference Principle implies the following result, which simplifies the computation of equilibrium points in strategic-form games. Its proof is left to the reader (Exercise [The new exercise in point 3 below]).

**Corollary 1** *Let $\sigma^*$ be an equilibrium in a strategic-form game and let $s_i$ and $\widehat{s}_i$ be two pure strategies of Player $i$.*

*(a) If $U_i(s_i, \sigma^*_{-i}) < U_i(\sigma^*)$ then $\sigma^*_i(s_i) = 0$.*
*(b) If $U_i(s_i, \sigma^*_{-i}) < U_i(\widehat{s}_i, \sigma^*_{-i})$ then $\sigma^*_i(s_i) = 0$.*
*(c) If $\sigma^*_i(s_i) > 0$ -$\sigma^*_i(\widehat{s}_i) > 0$ then $U_i(s_i, \sigma^*_{-i}) = U_i(\widehat{s}_i, \sigma^*_{-i})$.*
*(d) If $s_i$ is strictly dominated by $\widehat{s}_i$ then $\sigma^*_i(s_i) = 0$.*

7. On page 161, after Definition 5.19, add the following:

   A consequence of the Indifference Principle is the following.

   **Corollary 2** *Let $\sigma^*$ be an equilibrium in a strategic-form game and let $i \in N$ be a player. If $\sigma^*_i$ is a completely mixed strategy then $U_i(s_i, \sigma^*_{-i}) = U_i(\widehat{s}_i, \sigma^*_{-i})$ for every two pure strategies $s_i, \widehat{s}_i \in S_i$.*

8. On page 162, Equation (5.52), change $t'_i$ to $t_i$ (in the second line).

9. On page 170, first line of the proof of Claim 5.31, change “Theorem 5.26” to “Claim 5.26”.

10. On page 178, in the line after Figure 5.22, change “player $i$” to “Player I”. I the line after Equation (5.113), change $U_I(x, 1, 1)$ to $U_I(x, 0, 0)$; and change $U_I(x, 0, 0)$ to $U_I(x, 1, 1)$.

11. On page 190, the first highlighted equation, change the term “$2+2(1-x)^2$” to “$2 + 2\varepsilon x^2$”.

12. On page 195, Exercise 5.9, Game E should be:

| | $L$ | $M$ | $R$ |
|---|---|---|---|
| $T$ | 18 | 11 | 4 |
| $B$ | 6 | 11 | 16 |

Game E

13. On page 197, add a new exercise after Exercise 5.18.

    Prove Corollary [the new corollary we added on page 160]: Let $\sigma^*$ be an equilibrium in a strategic-form game and let $s_i$ and $\widehat{s}_i$ be two pure strategies of Player $i$.

(a) If $U_i(s_i, \sigma^*_{-i}) < U_i(\sigma^*)$ then $\sigma^*_i(s_i) = 0$.

(b) If $U_i(s_i, \sigma^*_{-i}) < U_i(\widehat{s}_i, \sigma^*_{-i})$ then $\sigma^*_i(s_i) = 0$.

(c) If $\sigma^*_i(s_i) > 0$ -$\sigma^*_i(\widehat{s}_i) > 0$ then $U_i(s_i, \sigma^*_{-i}) = U_i(\widehat{s}_i, \sigma^*_{-i})$.

(d) If $s_i$ is strictly dominated by $\widehat{s}_i$ then $\sigma^*_i(s_i) = 0$.

# Chapter 6

1. On page 225, In Figure 6.4, change $R$ to $T$ (2 times) and $L$ to $B$ (2 times).

2. On page 226, line 6, change the action $B$ to $L$.

3. On page 228, in the line before Equation (6.22) change $x^1_{\mathrm{I}}$ to $x^1_{10,\mathrm{I}}$ and $x^2_{\mathrm{I}}$ to $x^2_{10,\mathrm{I}}$. In Equation (6.23) change $x^1_4$ to $x^1_{4,\mathrm{I}}$ and $x^2_4$ to $x^2_{4,\mathrm{I}}$.

4. On page 229, Section 6.2.3, second line: Change to "then every behavior strategy of player $i$ has an equivalent mixed strategy."

5. On page 246, Exercise 6.4 should read as follows: Consider an extensive-form game (not necessarily with perfect information) in which Player I has a single information set, denoted $U_{\mathrm{I}}$.

   (a) Show that there is a natural identification between the set of mixed strategies of Player I and the set $\Delta(A(U_{\mathrm{I}}))$.

   (b) Show that there is a natural identification between the set of behavior strategies of Player I and the set $\Delta(A(U_{\mathrm{I}}))$.

   (c) Conclude from parts (a) and (b) that there is a natural identification between the set of mixed strategies of Player I and the set of his behavior strategies. Explain why two strategies that are identified with each other are not necessarily equivalent when the game does not have perfect recall.

   **Hint:** To answer part (c) determine the behavior strategy that is identified with the mixed strategy $[\frac{1}{2}(T), \frac{1}{2}(B)]$ in Example 6.9 (page 225) and explain why the two are not equivalent.

6. On page 240, Theorem 6.22: add the condition that $p(x^0) = 1$; that is, in the third line, after "satisfying" add "$p(x^0) = 1$ and".

7. On page 242, line before Theorem 6.25, change to "Theorems 6.22 and 6.23 imply the following theorem."

8. On page 250, Exercise 6.23, change the payoff $-3$ (in the fifth node from top) to 4.

# Chapter 7

1. On page 254, in the two paragraphs that follows Equation (7.1), change $[\frac{1}{2}, 1]$ to $[\frac{1}{2}, 1)$ (twice).

2. On page 255, in the proof of Theorem 7.5, change $\sigma_i'$ to $\sigma_i^x$ (seven times).

3. On page 260, in Figure 7.9, the actions $C$ and $S$ should have subscripts, that is, $C_1$ and $S_1$ (the leftmost appearance), $C_2$ and $S_2$ (the next), $C_3$, $S_3$, $S_4$, $C_{99}$, $S_{99}$, $C_{100}$, and $S_{100}$.

4. On page 267, second paragraph after Theorem 7.28, delete the words ", the converse of this theorem is not true:".

5. On page 277, change $p_\sigma(U_i)$ to $\mathbf{P}_\sigma(U_i)$ in Eqs. (7.35), (7.36), and (7.38). Change $p_{(\sigma_i',\sigma_{-i})}(U_i)$ to $\mathbf{P}_{(\sigma_i',\sigma_{-i})}(U_i)$ in Eqs. (7.35) and (7.37).

6. On page 279, in the paragraph that starts with "We next check", change $b$ on the second line to $t$, and $t$ on the third line to $b$.

7. On page 282, third line, change the second $[1(x_1)]$ to $[1(x_2)]$.

8. On page 283, change $p_\sigma(x_i)$ to $\mathbf{P}_\sigma(x_i)$ (five times for each of $i = 1$ and $i = 2$). Change $p_\sigma(U)$ to $\mathbf{P}_\sigma(U)$ (twice). Increase the font of the middle term in right-hand side of Eq. (7.47).

# Chapter 8

1. On page 301, Example 8.1, fifth line: $T$ should be $C$.

2. On page 306, Caption of Figure 8.5, change "Figure 8.1" to "Figure 8.4".

3. On page 309, Equation (8.20) should be corrected as follows:

$$\alpha \geq 2\beta, 2\delta \geq \gamma, \delta \geq 2\beta, 2\alpha \geq \gamma.$$

4. On page 311, Figure 8.11: the quantity $3\frac{2}{5}$ should be changed to $3\frac{3}{5}$ (twice in the line before the figure, and twice in the figure).

5. On page 311, Example 8.11, change the first sentence to "Consider the two-player coordination game depicted in Figure 8.12."

# Chapter 9

1. On page 339, Proof of Theorem 9.32, line 7, change "It follows that the event $A$ contains the event $C$" to "It follows that the event $\{\omega' \in \Omega\colon \mathbf{P}(A \mid F_{\mathrm{I}}(\omega')) = q_{\mathrm{I}}\}$ contains the event $C$".

2. On page 343, Equation (9.48), change to $\subset Y$ (from the current $\not\subseteq Y$).

3. On page 346, Figure 9.7, the caption of the right-hand side matrix should be "State game $G_{\mathrm{II}}$".

4. On page 348, line 25 should read "$A_j(t_j)$ do not depend on the player $j$'s type".

5. On page 350, Example 9.43 (continued): in the fourth line, the belief should be $[\frac{1}{5}(s_{FF}), \frac{4}{5}(s_{CF})]$. in the sixth line, the belief should be $[\frac{3}{5}(s_{FC}), \frac{2}{5}(s_{CC})]$.

6. On page 354, just after Definition 9.50, change $\widehat{u}(t_i, a)$ to $\widehat{u}_{t_i}(a)$.

7. On page 361, second line, it should be $u_1 = (\frac{5}{12})^2$ and $u_2 = (\frac{1}{6})^2$.

8. On page 361, Equation (9.101), change the order of the two summands: $\overline{u}_1 = \frac{1}{2}(\frac{5}{12})^2 + \frac{1}{2}(\frac{1}{4})^2 = \frac{1}{8}$.

9. On page 405, at the end of the statement of Theorem 10.32, change $i \in \mathbf{N}$ to $i \in N$.

# Chapter 10

1. On page 387, lines 12-13 of the paragraph that starts with "As in the Aumann": delete the second half of the sentence "and therefore the support ... for each state of the world $\omega \in Y$."

2. On page 389, after Example 10.3, add: "Recall that the support of a probability distribution $p$ that is defined on a finite set $Y$ is the set of all elements of $Y$ to which $p$ assigns positive probability:

$$\mathrm{supp}(p) := \{\omega \in Y : p(\omega) > 0\}. \tag{1}$$

   In Example 10.3 the support of the belief of each player in every state of the world is $Y$.

3. On page 414, Example 10.44, line 6 below the caption of Figure 10.13: $\pi_{\mathrm{I}}(x,y)$ should be $\pi_{\mathrm{II}}(x,y)$.

# Chapter 12

1. On page 475, between Equations (12.29) and (12.30), the sentence should say "We now show that $\beta$ is continuous at each point $v$ that satisfies $v > 0$."

2. On page 482, last sentence of the first paragraph of Example 12.28 should read "that buyer wins the auction and pays nothing."

3. On page 490, third line and fifth line, change $u_i(\gamma_i, \gamma_{-i}; v_i) = 0$ to $u_i(v_i, \gamma_{-i}; v_i) = 0$.

4. On page 491, Equation (12.113), change the $x$ to $v$.

5. On page 496, Example 12.46, second line after Equation (12.129), change "Since $\beta$ is a symmetric equilibrium strategy" to "Since $\beta$ is an equilibrium".

6. On page 507, Equation (12.193), first line, change to "$v_i \leq \rho$ or $v_i < \max_{j \neq i} v_j$".

# Chapter 13

1. On page 522, Figure 13.2, the actions $D$ and $C$ should have subscripts: at the top level the subscript is 1, at the second level it is 2, at the third level 3, and at the bottom level 4. The same correction should be done to Figure 13.5 on page 526.

2. On page 534, just before Step 1, we add a new step. Consequently, in the proof of Theorem 13.9, "Step 1" should become "Step 2", (page 534) "Step 2" should become "Step 3" (page 535), "Step 3" should become "Step 4" (page 535), "Step 4" should become "Step 5" (page 536), and "Step 5" should become "Step 6" (page 536).

   Denote $\delta_i = u_i(\beta(i)) - \overline{v}_i > 0$ and
   $$\delta = \min\left\{\min_{i\in N}\delta_i, \tfrac{1}{2}\right\} > 0. \tag{2}$$

   *Step 1:* One can assume w.l.o.g. that $x_i \geq \overline{v}_i + \frac{\varepsilon\delta}{4M}$ for every $i \in N$.

   Define a vector $y \in \mathbf{R}^N$ by Ł
   $$y := \left(1 - \tfrac{\varepsilon}{4nM}\right)x + \tfrac{\varepsilon}{4M}\sum_{i=1}^{n} u(\beta(i)). \tag{3}$$

   Because $y$ is a convex combination of vectors in $F$, we have $y \in F$. For every player $i \in N$ we have (a) $x_i \geq \overline{v}_i$, (b) $u_i(\beta(j)) \geq \overline{v}_i$ for every $j \in N$, and (c) $u_i(\beta(i)) \geq \overline{v}_i + \delta$, and therefore $y_i \geq \overline{v}_i + \frac{\varepsilon\delta}{4M}$. In addition, for every player $i \in N$ we have
   $$|y_i - x_i| \leq 2nM\tfrac{\varepsilon}{4nM} = \tfrac{\varepsilon}{2}. \tag{4}$$

   Fix now $\varepsilon > 0$ and suppose that we proved that there is $T_0 \in \mathbf{N}$ such that for every $T \geq T_0$ and every payoff vector $y \in F$ that satisfies $y_i \geq \overline{v}_i + \frac{\varepsilon}{2}$ there is an equilibrium $\tau^*$ in the $T$-stage game that satisfies $\|\gamma^T(\tau^*) - y\|_\infty < \frac{\varepsilon}{2}$. By the triangle inequality and Equation (4) we have $\|\gamma^T(\tau^*) - x\|_\infty < \varepsilon$ and therefore Theorem 13.9 will be proven.

3. On page 534, in the first line after Theorem 13.11, change $K \geq \frac{2M\times|S|}{\varepsilon}$ to $K \geq \frac{4M^2\times|S|}{\varepsilon\delta}$. At the end of this paragraph (that is, at the end of the page) add "Because $x_i \geq \overline{v}_i + \frac{\varepsilon\delta}{4M}$ it follows that the average payoff of player $i$ along one cycle is at least $\overline{v}_i$."

4. On page 535, Step 3, line 6, change "By the choice of $K$," to "By the choice of $K$ and because $\delta \leq \frac{1}{2}$,"

5. On page 536, line 17, change " is $x$" to "is at least $\overline{v}_i$". Delete the words "while $\overline{v}_i \leq x_i$" that appear at the end of the paragraph.

6. On page 544, add the following just before Definition 13.22.

   **Example 13.1 (continued)** Consider the strategy pair $\tau^*$ that was defined on Page 540, in which the players repeat the 8 action pairs

   $$(D,D),(D,D),(D,D),(D,D),(D,D),(C,C),(C,D),(C,D).$$

   The discounted payoff under the strategy pair $\tau^*$ is

   $$\begin{aligned} \gamma^\lambda(\tau^*) &= (1-\lambda)((1,1)(1+\lambda+\lambda^2+\lambda^3+\lambda^4)+(3,3)\lambda^5 && (5)\\ &\quad +(0,4)(\lambda^6+\lambda^7))(1+\lambda^8+\lambda^{16}+\cdots) && (6)\\ &= \tfrac{1-\lambda}{1-\lambda^8}\left((1,1)\tfrac{1-\lambda^5}{1-\lambda}+(3,3)\lambda^5+(0,4)\tfrac{\lambda^6(1-\lambda^2)}{1-\lambda}\right) && (7)\\ &= \left(\tfrac{1-2\lambda^5-3\lambda^6}{1-\lambda^8}, \tfrac{1+2\lambda^5+\lambda^6-4\lambda^8}{1-\lambda^8}\right). && (8)\end{aligned}$$

   The reader can verify that by L'hôpital's rule $\lim_{\lambda\to 1}\gamma^\lambda(\tau^*) = (1,2)$, which is the average payoff along one cycle.

7. On page 545, change the second and third paragraphs to the following:

   Let $\tau^*$ be an equilibrium of the discounted game $\Gamma_\lambda$. The vector $\gamma^\lambda(\tau^*)$ is feasible and individually rational (why?) and therefore $\gamma^\lambda_{\mathrm{I}}(\tau^*) = \gamma^\lambda_{\mathrm{II}}(\tau^*) = 1$. It is left to show that $\gamma^\lambda_{\mathrm{III}}(\tau^*) = 0$. Since the entries in the payoff matrix in which Player III's payoff is nonzero are $(T,L)$ and $(M,R)$, it is enough to show that under $\tau^*$ these entries are played at every stage with probability 0. We will show that under $\tau^*$ at every stage Player I plays $B$ with probability 1.

   The sum of payoffs of Players I and II in all entries of the payoff matrix is at most 2. Since the discounted payoff is a weighted average of the stage payoffs with positive weights for every stage, and since $\gamma^\lambda_{\mathrm{I}}(\tau^*) + \gamma^\lambda_{\mathrm{II}}(\tau^*) = 2$, under $\tau^*$ the sum of payoffs of Players I and II in all stages is 2:

   $$\mathbf{E}_{\tau^*}[u^t_{\mathrm{I}} + u^t_{\mathrm{II}}] = 2, \quad \forall t \in \mathbf{N}.$$

Since the sum of payoffs for Players I and II at $(M, L)$ and $(T, R)$ is strictly less than 2, it follows that these two entries are not chosen under $\tau^*$: if one of these entries had been chosen at some stage with positive probability, we would have obtained that $\gamma^\lambda_{\mathrm{I}}(\tau^*) + \gamma^\lambda_{\mathrm{II}}(\tau^*) < 2$, a contradiction.

8. On page 545, change the paragraph between Equations (13.46) and (13.47) to the following:

   The arguments provided above show that $\gamma^\lambda_i(\tau^* \mid h^t) = 1$ for $i \in \{\mathrm{I}, \mathrm{II}\}$ and any history $h^t$ that has positive probability under $\tau^*$. To prove that $\gamma^\lambda_{\mathrm{III}}(\tau^*) = 0$ we will show that the pairs of actions $(T, L)$ and $(M, R)$ are chosen under $\tau^*$ with probability 0. We will show this claim only for the pair of actions $(T, L)$.

   Let $t \geq 0$ and $h^t \in H(t)$ a history that occurs under $\tau^*$ with positive probability, and assume to the contrary that $\tau^*_{\mathrm{I}}(T \mid h^t) > 0$ and $\tau^*_{\mathrm{II}}(L \mid h^t) > 0$. Since the action pairs $(M, L)$ and $(T, R)$ are chosen under $\tau^*$ with probability 0, we necessarily have $\tau^*_{\mathrm{I}}(M \mid h^t) = 0$ and $\tau^*_{\mathrm{II}}(R \mid h^t) = 0$. It follows that $\tau^*_{\mathrm{II}}(L \mid h^t) = 1$ and $\tau^*_{\mathrm{I}}(B \mid h^t) = 1 - \tau^*_{\mathrm{I}}(T \mid h^t)$. Set $\alpha := \tau^*_{\mathrm{I}}(B \mid h^t)$. Then

9. On page 560, Exercise 13.20, replace the second sentence by the following:

   (a) Compute the minmax values of the three players.

   (b) Does the game satisfy the conditions of Theorem 13.9 on page 531?

   (c) Describe an equilibrium in the 1000-stage repeated game whose payoff is within 0.1 of $(2, 1, 2\frac{1}{2})$.

   (d) Describe an equilibrium in the infinitely repeated game whose payoff is $(2, 1, 2\frac{1}{2})$.

# Chapter 14

1. On page 575, line 4, it should be $M \geq 1$ (and not $M \geq \frac{1}{2}$).

2. On page 581, third line after Equation (14.36), it should be $M \geq 1$ (and not $M \geq \frac{1}{2}$).

## Chapter 21

1. On page 865, the line before Definition 21.22, change $F$ to $G$ (twice).
2. On page 865, Example 21.24, first line: change to "when $n$ is larger than 1 and odd".
3. On page 867, Equation (21.17), delete the comma on the left-hand side.
4. On page 869, line 16, change to "complete, reflexive and transitive relation".
5. On page 869, line 21, change to "Theorem 21.32 and Corollary 21.33 imply that".
6. On page 874, Section 21.5, line 4, change "Lull" to "Llull".
7. On page 880, Exercise 21.10, change "not manipulable" to "manipulable".

## Chapter 22

1. On page 911, Exercise 22.28, change the last three lines to "one of these men does not gain; in other words, one of these man will be matched to the woman to whom he has been matched under $O^m$ or to a woman he prefers less than her.

## Chapter 23

1. On page 917, first line after Definition 23.1, change $(\alpha^j)_{j=1}^k$ to $(\alpha^l)_{l=0}^k$.
2. On page 919, delete the second paragraph and the proof of Theorem 23.6. Replace the second paragraph by the following:

   For every vector $x = (x_1, x_2, \ldots, x_n) \in \mathbf{R}^n$ denote $x_+ := (x_1, x_2, \ldots, x_n, 1) \in \mathbf{R}^{n+1}$. The definition of an affine independent set of vectors (Definition 23.3) implies that the set of vectors $\{x^1, x^2, \cdots, x^k\}$ is affine independent if and only if the set of vectors $\{x_+^1, x_+^2, \cdots, x_+^k\}$ is linearly independent.

Since every collection of $n+2$ vectors in $\mathbf{R}^{n+1}$ is linearly dependent we obtain the following result.

3. On page 920, first line, change "affine dependent" to "affine independent".

4. On page 924, first line of the second paragraph, change "are" to "and".

5. On page 937, at the very beginning, add "Let $\mathcal{T}_\varepsilon$ be a simplicial partition of $X(n)$ with diameter smaller than $\delta = \delta(\varepsilon)$."

6. On page 951, Exercise 23.8, third line, change $l \in \{1, 2, \ldots, k\}$ to $l \in \{0, 1, \ldots, k\}$.

## Bibliography

1. On page 958, the title of Aumann (1976) is "Agreeing to disagree".

2. On page 964, the title of the book by Peleg and Sudhölter is "Introduction to the Theory of Cooperative Games".

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