

Page	Detailed Location	What is wrong	Correction
Page 20	Session 1. Problem 3b	" <u>white</u> marbles"	" <u>blue</u> marbles"
Page 47	Session 1. Problem 7 Discussion.	"33/14 weeks is 2 weeks and <u>5</u> days"	"33/14 weeks is 2 weeks and <u>2.5</u> days"
Page 52	Session 6. Problem 2	" <u>138</u> legs"	" <u>104</u> legs"
Page 67	Session 8. The fifth paragraph, which starts with "For example:" Several typos after the second equal sign	"(6-18)+22-4-8=-12+22-4+8=(-12+20)-4+8=(8-4)+8=4+8=12"	"(6-18)+22-4-8= - 12 + 22 - 4 - 8 = (- 12 + 22) - 4 - 8 = (10 - 4) - 8 = 6 - 8 = - 2"
Page 88	Session 11. Problem 1	" <u>hew</u> "	" <u>he</u> "
Page 95	Session 12. Problem 5a, end of line 4	" <u>It is</u> "	" <u>Is it</u> "
Page 103	Session 13. Problem 5 and its solution (page 284)	An extra picture in the solution that shows how to split the square into 9 smaller squares	There should be a part (c): "Same question for 9 squares"
Pages 110-111	Session 14. Problem 6 "Land of Figuria"	Mismatch with the solution on pages 285-286. Page 110: "greater than <u>six</u> "	Page 110: "greater than <u>five</u> "
Page 115	Session 15, Problem 1 "The elevator in the Strangelly Building"	The directions say "7 floors <u>up</u> and 9 floors <u>down</u> ", but the solutions talk about "7 floors <u>down</u> and 9 floors <u>up</u> "	<u>Option 1</u> : to modify the problem text to "9 floors <u>up</u> and 7 floors <u>down</u> " <u>Option 2</u> : use the solution below for the problem the way it is published in the book. <i>Author's advice: choose Option 1.</i>
Page 141	Session 19. Second paragraph, second sentence	"Of <u>cause</u> "	"Of <u>course</u> ",
Page 154	Session 21. Problem 4, next to last sentence	"the spot where he saw <u>Tim</u> "	"the spot where he saw <u>Alex</u> "
Page 172	Session 23. Problem 10, third sentence (lines 3-4)	"The rest of the islanders said that the number of the <u>knights</u> on the island was odd"	"The rest of the islanders said that the number of the <u>liars</u> on the island was odd"

Page 195	Session 27, Problem 4, the last line	" <u>Alex</u> goes first"	" <u>Tim</u> goes first"
Page 263	Session 6 solutions, Problem 8	"2331 – <u>59</u> = <u>1272</u> "	"2331 – <u>590</u> = <u>1741</u> "
Page 271	Session 9 solutions, Problem 2	"Bella was an <u>angel</u> , Lilith was a <u>witch</u> , and Tanya was a <u>devil</u> ."	"Bella was a <u>devil</u> , Lilith was an <u>angel</u> , and Tanya was a <u>witch</u> ."
Page 277	Session 11 solutions, Problem 7(b), last line on the page.	"The last room, the <u>64</u> th , is white"	"The last room, the <u>36</u> th , is white"
Page 280	Session 12 solutions, Problem 9	"Let <u>up</u> "	"Let <u>us</u> "
Page 281	Session 13 solutions, Problem 5(b), second line	"worth"	"worse"
Page 285	Session 14 solutions, Problem 1(b), second line	" <u>2</u> on the bottom, <u>5</u> on the rear, and <u>4</u> on the left face"	" <u>4</u> on the bottom, <u>2</u> on the rear, and <u>5</u> on the left face"
Page 288	Session 15 solutions, Problem 1 "The elevator in the Strangelly Building"	The directions say "7 floors <u>up</u> and 9 floors <u>down</u> ", but the solutions talks about "7 floors <u>down</u> and 9 floors <u>up</u> "	<u>Option 1</u> : to modify the problem text to "9 floors <u>up</u> and 7 floors <u>down</u> " <u>Option 2</u> : use the solution below for the problem the way it is published in the book <i>Author's advice: choose Option 1.</i>
Page 292	Session 16 solutions. Problem 4(b)	" $625/20+3 = 31 \frac{1}{4}$ "	" $625/20+3 = 31 \frac{1}{4}+3=34\frac{1}{4}$ ". Thus, the correct answer is 35 hot dogs.
Page 293	Session 16 solutions, Problem 9, three last lines	"Next, assume that a row (column) contains three <u>white</u> cells and one <u>black</u> . Then these three cells become <u>black</u> , and one -- <u>white</u> ."	"Next, assume that a row (column) contains three <u>black</u> cells and one <u>white</u> . Then these three cells become <u>white</u> , and one -- <u>black</u> ."

Page 294	Session 16 solutions, Problem 9, lines 3-4 4 on page 294	"If a row (column) contains only one <u>white</u> cell"	"If a row (column) contains only one <u>black</u> cell"
Page 296	Session 17 solutions, Problem 3, Anton's plan. , lines 3-4 4 on page 294	"In each of these cases, each of the two unknown digits can be filled in <u>10</u> different ways. Therefore, the total number of winning digits is <u>$10 \times 10 + 10 \times 10 + 10 \times 10 = 300$</u> . Therefore, if Anton's plan is selected, the lottery will bring in <u>$1000 - 3 \times 300 = 100$</u> dollars. Thus, <u>Alex's</u> plan is the most profitable."	"In each of these cases, each of the two unknown digits can be filled in <u>9</u> different ways. Therefore, the total number of winning digits is <u>$9 \times 9 + 9 \times 9 + 9 \times 9 = 243$</u> . Therefore, if Anton's plan is selected, the lottery will bring in <u>$1000 - 3 \times 243 = 271$</u> dollars. Thus, <u>Anton's</u> plan is the most profitable."
Page 298	Session 18, Math Hockey Answers, Problem 10. (Dolly, Molly, and Polly)	" <u>7</u> minutes"	" <u>2</u> minutes"
Page 299	Session 18 solutions, Problem 2	" $4 \times 3 \times 2 \times 1 = $ <u>48</u> "	" $4 \times 3 \times 2 \times 1 = $ <u>24</u> "
Page 302	Session 19 Solutions. Problem 5.	The solution is incomplete	The correct solution is presented below.
Page 303	Session 20 Solutions. Problem 4 (b), the last line	" $R = $ <u>3</u> "	" $R = $ <u>8</u> "
Page 307	Session 21 Solutions. Problem 7, last two lines.	"numbers 1, <u>2</u> , 4, and 5", "The number in the central square has to be <u>3</u> ."	"numbers 1, <u>3</u> , 4, and 5" "The number in the central square has to be <u>2</u> ."
Page 309	Session 21, additional problems solutions, Problem 3.,	" <u>15</u> cubes are of one color, <u>14</u> cubes are of another color." "The mouse had to eat <u>15</u> cubes of one color, and <u>13</u> of another."	All numbers should be one smaller: " <u>14</u> cubes are of one color, <u>13</u> cubes are of another color." "The mouse had to eat <u>15</u> cubes of one color,

			and <u>13</u> of another.”
Page 314	Session 23 Solutions. Problem 8. Lines 4 in the first paragraph, and 4 in the third paragraph	"product <u>n</u> " "msut"	"product" "must"

Solution for Problem 1, Session 15.

- (a) It is possible to get from the second floor to the first floor with the following sequence of commands: +7 (to the 9th floor), +7 (to the 16th floor), -9 (to the 7th floor), +7 (to the 14th floor), -9 (to the 5th floor), +7 (to the 12th floor), -9 (to the 3rd floor), +7 (to the 10th floor), -9 (to the 1st floor).
- (b) It is possible to get from the first floor to the second floor with the following sequence of commands: +7 (to the 8th floor), +7 (to the 15th floor), -9 (to the 6th floor), +7 (to the 13th floor), -9 (to the 4th floor), +7 (to the 11th floor), -9 (to the 2nd floor),
- (c) Since Mr. Thompson starts on the first floor, then he can follow the sequence of commands listed in part (b). This way, he will clean all the floors mentioned in (b) and will end up on the second floor. Moreover, if Mr. Thompson will continue with the sequence of commands from (a), he can visit all the floors listed in (a) and get back to the first floor. Thus, the two sets of commands together form a “closed loop” that brings Mr. Thompson back to the first floor: 1, 8, 15, 6, 13, 4, 11, 2, 9, 16, 7, 14, 5, 12, 3, 10, 1. All floors except of 17 and 18 are in this loop. To find the floors that are accessible by the elevator but not included into this loop, we are to look for possible “branching points” within the loop. These are those floors where Mr. Thompson has two choices: to head 7 floors up and 9 floors down. In fact, the 11th and 10th floor is the only floor like this. Other floors are either too close to the top or to the bottom of the building.
- Let us explore the option of heading up from the 11th floor. The “+7” command gets us to the 18th floor. From there, we have no choice but to select “-9” and to arrive to the 9th floor.
- Let us explore the option of heading up from the 10th floor. The “+7” command gets us to the 17th floor. From there, we have no choice but to select “-9” and to arrive to the 10th floor.
- Thus, Mr. Thompson will be able to reach all the floors using the elevator.

Solution for Problem 5, Session 19.

Let us mark two bronze coins as B1 and B2, two silver coins as S1 and S2, and two gold coins as G1 and G2.

First weighing: compare S1 and B1 with S2 and G2. Of the two coins S1 and S2, one is heavy, and another one is light. Therefore, depending on the weights of B1 and G2, this weighing has three possible outcomes:

- **S1 and B1 are lighter than S2 and G2.** (The left pan is lighter than the right pan.) If this is the case, we learn two important facts:
 - o S1 is lighter than S2,
 - o B1 is not heavier than G2. (Three possibilities for B1 and G2: B1 light and G2 light, B1 light and G2 heavy, B1 heavy and G2 heavy.)

Why is it so? If S1 was heavy, then the heaviest possible weight for right pan would be light + heavy. In this case, this left pan would never be lighter than right. Thus, S1 should be light. If B1 is heavy, then G2 should be heavy. If B1 is light, then G2 can be either heavy or light.

- **S1 and B1 are heavier than S2 and G2.** Reasoning the same way, we deduce that S1 should be heavier than S2 and that B1 should be not lighter than G2.
 - o S1 is heavier than S2,
 - o G2 is not heavier than B1. (Three possibilities for B1 and G2: B1 light and G2 light, B1 heavy and G2 light, B1 heavy and G2 heavy.)
- **S1 and B1 weigh the same as S2 and G2.** In this case, either B1 is light and G2 is heavy, or G2 light and B1 is heavy.

Second weighing:

- **If S1 and B1 are lighter than S2 and G2:** We have three possibilities for B1 and G2. How to figure out which one is correct? Let us compare S1 and S1 (left pan) with B1 and G2 (right pan). Left pan is light + heavy. Right pan is either light + light, light + heavy, or heavy + heavy. Thus, if the scale is balanced, then B1 is light and G2 is heavy, if the left pan is lighter than both B1 and G2 are heavy, and if the left pan is heavier than for B1 and G2 are light.
- **If S1 and B1 are heavier than S2 and G2:** The reasoning is the same as in the previous case
- **If S1 and B1 weigh the same as S2 and G2:** We do know that from the two coins B1 and G2 one is counterfeit, and another one is real. Let us compare these two coins (second weighing). Suppose that B1 turns out to be heavy (real) and G2 -- light (counterfeit). It follows that B2 is counterfeit and G1 is real. Moreover, since we know that S1 and B1 weigh the same as S2 and G2, then S1 is counterfeit and S2 is real.