35. a) $x = 6$ $\quad -9 = -9$
b) $x = 1$ $\quad 9 = 9$
c) $x = 3$ $\quad -15 = -15$
d) $x = -3$ $\quad -225 = -225$
e) $x = 25$ $\quad 4 = 4$
f) $x = -1$ $\quad 0 = 0$

36. a) $x = 7$ $\quad 260 = 260$
b) $x = 15$ $\quad -151 = -151$
c) $x = 0$ $\quad 0 = 0$
d) $x = 2$ $\quad 5 = 5$
e) $x = 10$ $\quad 0 = 0$
f) $x = 20$ $\quad 169 = 169$

37. a) $x = -3$ $\quad 45 = 45$
b) $x = 4$ $\quad 0 = 0$
c) $x = -2$ $\quad 0 = 0$
d) $x = 25$ $\quad -1250 = -1250$
e) $x = 1$ $\quad 4 = 4$
f) $x = 2$ $\quad 0 = 0$

38. a) $x = 1$ $\quad 0 = 0$
b) $x = -1$ $\quad 0 = 0$
c) $x = 3$ $\quad 0 = 0$
d) $x = 2$ $\quad 0 = 0$
e) $x = 1$ $\quad 27 = 27$
f) $x = 2$ $\quad 5 = 5$

41. a) $x = 2$ $\quad \frac{7}{9} = \frac{7}{9}$

b) $x = \frac{1}{2}$ $\quad -2\frac{1}{5} = -2\frac{1}{5}$

c) $x = 3$ $\quad 0 = 0$

d) $x = 7$ $\quad 0 = 0$

e) $x = -\frac{3}{4}$ $\quad \frac{128}{55} = \frac{128}{55}$

f) $x = -14$ $\quad -10\frac{5}{21} = -10\frac{5}{21}$

g) $x = 1$ $\quad -\frac{1}{4} = -\frac{1}{4}$

42. a) $x = 2{,}5$ $\quad 2\frac{51}{77} = 2\frac{51}{77}$

b) $x = \frac{2}{7}$ $\quad -\frac{272}{115} = -\frac{272}{115}$

c) $x = \frac{1}{3}$ $\quad -7\frac{7}{10} = -7\frac{7}{10}$

d) $x = 2$ $\quad -\frac{11}{14} = -\frac{11}{14}$

e) $x = 4{,}5$ $\quad -\frac{118{,}75}{27} = -\frac{118{,}75}{27}$

f) $x = -1$ $\quad 0 = 0$

g) $x = \frac{3}{4}$ $\quad -8\frac{16}{25} = -8\frac{16}{25}$

2. PROBLEMI PRVOG STUPNJA S JEDNOM NEPOZNANICOM

a) Aritmetički sadržaj

Problemi iz odnosa među brojevima

43. $\frac{3x-5}{2} = 2x - 7$
$x = 9$

44. $\frac{x+5}{3} - 8 = 2x - 18$
$x = 7$

45. $(2x - 7)\,2 = 3x - 4$
$x = 10$

46. $2(x + 1) - 3(x - 2) = 4(x - 3) - x$
$x = 5$

47. $7(x - 1) + 5(x - 6) = 4(x + 2) + 3$
$x = 6$

48. $4(x + 3) - 5(x - 2) = 3(x + 4) - 14$
$x = 6$

50. $\frac{\frac{2}{3}x - 3}{3} = \frac{3x+4}{21}$
$x = 15$

52. $\frac{x}{2} + \frac{x}{3} + \frac{x}{9} = x - 2$
$x = 36$

59. $\frac{x}{2} + \frac{x}{3} + \frac{x}{7} = x - 1$

$x = 42$

60. $\frac{5x - 3x}{2} = 2x - 4$

$x = 4$

61. $\frac{x}{2} + \frac{x}{3} + \frac{x}{4} + \frac{x}{6} = 60$

$x = 48$

62. $x + x - 3 + x - 3 - 8 = 40$

$x = 18;\ 15;\ 7$

63. $\frac{3}{4}x - \frac{1}{5}x = 66$

$x = 120$

64. $x - 7 + x + x + 11 = 52$

$x = 16;\ 9;\ 27$

65. $\frac{5}{18}x + \frac{5}{24}x = 53$

$x = 72$

66. $4(x + 3) - 3(x - 4) = 5(x+1) + 3$

$x = 4$

67. $7(x - 1) + 2(x - 4) = 3(x + 2) + 15$

$x = 6$

68. $6(x - 3) - 5(x - 6) = 4(x - 2) - 1$

$x = 7$

69. $5(x + 1) - 3(x - 1) = 3x$

$x = 8$

70. $\frac{4\,233}{x} = 120 + \frac{33}{x}$

$x = 35$

71. $\frac{3\,148}{x} = 116 + \frac{16}{x}$

$x = 27$

72. $\frac{2\,376}{x} = 158 + \frac{6}{x}$

$x = 15$

73. $\frac{976}{x} = 36 + \frac{4}{x}$

$x = 27$

74. $3(x - 3) + 2(x + 2) = 4(x - 1) + 6$

$x = 7$

75. $5(x - 3) - 3(x - 4) = 4(x - 6) + 5$

$x = 8$

76. $5(x + 3) - 7(x - 7) = 4(x + 1) + 6$

$x = 9$

77. $8(x - 3) + 7(x - 9) = 7x - 7$

$x = 10$

78. $\frac{x + 8}{3} - 7 = 2x - 21$

$x = 10$

79. $\frac{2x + 4}{5} = \frac{x}{4} + 2$

$x = 8$

80. $\frac{14 - x}{7} + 5 = x - 1$

$x = 7$

81. $\frac{3}{8}x - 50 = \frac{5}{8}x - 70$

$x = 80$

82. $\frac{x - 12}{3} + 18 = 2x - 11$

$x = 15$

83. $\frac{4}{7}x - 110 = \frac{3}{7}x - 20$

$x = 560$

84. $37 \cdot 15 - x = 243 : 81$

$x = 552$

85. $\frac{x+5}{18} - 1 = 100$

$x = 1\,813$

86. $(x - 25)\,2 = 276$

$x = 163$

87. $5(x-3) + 3(x+1) = 7(x-2) + 10$

$x = 8$

88. $5(x-4) + 2(x-7) = 3(x-3) + 11$

$x = 9$

89. $\frac{x+13}{3} - 7 = 2x - 11$

$x = 5$

90. $\frac{2x-5}{7} + 1 = 2x - 10$

$x = 6$

91. $4x = \frac{117 - x}{3}$

$x = 9;\ 108$

92. $2(x+7) - 3(x+2) = 4(x-3) - 25$

$x = 9$

93. $3x = \frac{154 - x}{2}$

$x = 22;\ 132$

94. $x - 9 + x + x + 8 = 80$

$x = 27;\ 18;\ 35$

95. $10x + 5x + 36 = 50x + x$

$x = 1 \qquad 15 + 36 = 51$

96. $10x + 6x + 45 = 60x + x$

$x = 1 \qquad 16 + 45 = 61$

97. $70x + x - 54 = 10x + 7x$

$x = 1 \qquad 71 - 54 = 17$

98. $80x + x - 63 = 10x + 8x$

$x = 1 \qquad 81 - 63 = 18$

107. $(10x + x + 7) : [10(x+7) + x] = 2 : 9$

$x = 1 \qquad 18 : 81 = 2 : 9$

108. $(10x + x + 1) : [10(x+1) + x] = 4 : 7$

$x = 1 \qquad 12 : 21 = 4 : 7$

135. $\frac{4+x}{35} = \frac{4}{5}$

$x = 24 \qquad \frac{4}{5} = \frac{4}{5}$

136. $\frac{21}{8+x} = \frac{3}{8}$

$x = 48 \qquad \frac{3}{8} = \frac{3}{8}$

137. $\frac{63}{9+x} = \frac{7}{9}$

$x = 72 \qquad \frac{7}{9} = \frac{7}{9}$

138. $\frac{5+x}{12-x} = \frac{13}{4}$

$x = 8 \qquad 3\frac{1}{4} = 3\frac{1}{4}$

139. $\frac{7+x}{11-x} = \frac{5}{4}$

$x = 3 \qquad 1\frac{1}{4} = 1\frac{1}{4}$

140. $\frac{3+x}{30} = \frac{3}{5}$

$x = 15 \qquad \frac{3}{5} = \frac{3}{5}$

169. $3\,[3\,(3x - 100) - 50] - 1\,500 = 10x \qquad x = 150$

170. $4x + x + 3 = 63 \quad x = 12$. Četiri jednaka pribrojnika su 12, a peti je 15.

171. $x - \frac{x}{2} - \frac{x}{4} - \frac{x}{8} - \frac{x}{16} = 3 \qquad x = 48$

172. Zadatak treba razraditi u četiri dijela. Tako je najpreglednije.

1) $x - \left(\frac{x}{3} + 2\right) = x - \frac{x}{3} - 2 = \frac{3x - x}{3} - 2 = \frac{2x}{3} - 2$

2) $\frac{2x}{3} - 2 - \left(\frac{x}{3} - 1 + 3\right) = \frac{x}{3} - 4$

3) $\frac{x}{3} - 4 - \left(\frac{x}{12} - 1 + 1\right) = \frac{x}{4} - 4$

4) $\frac{x}{4} - 4 - \left(\frac{x}{8} - 2 + 4\right) = 12$

$x = 144$ To je broj 144.

173. Rješavamo kao zadatak 172.

1) $x - \left(\frac{x}{4} + 5\right) = \frac{3x}{4} - 5$

2) $\frac{3x}{4} - 5 - \left[\frac{2}{5}\left(\frac{3x}{4} - 5\right) - 2\right] = \frac{3x}{4} - 5 - \left[\frac{3}{10}x - 2 - 2\right] = \frac{9x}{20} - 1$

3) $\frac{9x}{20} - 1 - \left[\frac{3}{8}\left(\frac{9x}{20} - 1\right) + 4\right] = \frac{9x}{20} - 1 - \left[\frac{27x}{160} - \frac{3}{8} + 4\right] = \frac{9x - 148}{32}$

4) $\frac{9x - 148}{32} - \left(\frac{9x - 148}{64} + 3\right) = 20$

$x = 180$

174. Označimo li s x dvoznamenkasti dio broja na mjestu stotica i desetica, naš je broj $10x + 3$. Pomicanjem znamenke 3 na mjesto stotica dolazimo do izraza $300 + x$. Jednadžba glasi:

$(10x + 3) : (300 + x) = 3 : 4 \qquad x = 24$

Prvi je broj 243, a drugi 324.

175. $(200 + x) : (10x + 2) = 41 : 77 \qquad x = 46 \qquad$ 246 i 462

176. $(400 + x) : (10x + 4) = 38 : 47 \qquad x = 56 \qquad$ 456 i 564

177. $(2\,000 + x) : (10x + 2) = 311 : 888 \qquad x = 799 \qquad$ 2 799 i 7 992

178. $10\frac{2}{7} + \frac{3}{7}x = 25\frac{1}{5} - \frac{2}{5}x$

$x = 18$

179. $17\frac{5}{8} + \frac{3}{8}x = 30\frac{4}{5} - \frac{2}{5}x$

$x = 17$