Tic Tac Math

All rows, columns, and three numeral diagonals must add up to the same sum. Write the total and then fill in the empty spaces.

Problem 1

	12	37
		14
		24

Total: _____

Problem 2

30		
35	35	35

Total: _____

Problem 3

56	0	
	35	
		14

Total: _____

Problem 4

	57	
	33	
	9	51

Total: _____

Problem 2: ? = 10

Explanation: Remove ■ from both sides on 2nd balance so ○◆ = 15. Substitute 15 for each ○◆ on 1st balance so 15 + 15 = 30 = ★ ★ ★. Divide both sides in thirds so 10 = ★.

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Problem 1:

120	80	280
320	160	0
40	240	200

Total: 480

Problem 2:

43	1	67
61	37	13
7	73	31

Total: 111

Problem 3:

30	50	22
26	34	42
46	18	38

Total: 102

Problem 4:

48	43	44
41	45	49
46	47	42

Total: 135

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Problem 1: ? = 75

Explanation: Remove ◇ from both sides on 2nd balance so ●● = ◇□. Substitute ●● for ◇□ on 1st balance so 100 = ●●●●. Divide in fourths, ● = 25. Divide both sides in half on 1st balance so 50 = ◇□. ◇●□ = 25 + 50 = 75.

Problem 2: ? = 750

Explanation: Remove ⊖+ 10 from both sides on 2nd balance so ◆ = 15. Substitute 15 for ◆ on 1st balance so ⊖ = 500. Divide in half so ▽ = 250. ⊖▽ = 500 + 250 = 750.

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Problem 1: b = 200
c = 40
d = 130
a - d = 0

Problem 2: a = 470
c = 140
d = 220
b - c = 250

Problem 3: a = 66
b = 46
d = 36
a - c = 50

Problem 4: a = 112
b = 94
c = 52
b - d = 55

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Problem 1: ? = 72

Explanation: Remove ☆ from both sides on 1st balance so ◆◆◆◆ = ⊖⊖⊖. Double both sides on 2nd balance so ⊖ = 32. Substitute 32 for ⊖ on 1st balance so ◆◆◆◆ = 96. Divide both sides in fourths so ◆ = 24. ◆◆◆ = 24 + 24 + 24 = 72.

Problem 2: ? = 12

Explanation: Divide both sides on 1st balance in half so △ = ●. Substitute ● for each △ on 2nd balance so ●●●● = 12 + ●●. Remove ●● from sides so ●● = 12.

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Problem 1: b = 65
c = 27
d = 48
b - d = 17

Problem 2: a = 82
c = 29
d = 38
a - c = 53

Problem 3: a = 100
b = 81
d = 33
a - d = 67

Problem 4: a = 125
b = 136
c = 88
b - c = 48

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Problem 1:

800	600	1,600
1,800	1,000	200
400	1,400	1,200

Total: 3,000

Problem 2:

101	5	71
29	59	89
47	113	17

Total: 177

Problem 3:

55	78	68
80	67	54
66	56	79

Total: 201

Problem 4:

91	7	103
79	67	55
31	127	43

Total: 201

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Problem 1: b = 52
c = 48
d = 2
a - d = 10

Problem 2: a = 150
c = 850
d = 125
b - c = 75

Problem 3: a = 63
b = 71
d = 37
a - c = 36

Problem 4: a = 1,000
b = 118
c = 582
b + d = 877

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Problem 1: ? = 24

Explanation: Remove 3 from both sides and divide in fourths on 1st balance so 9 = ◢. Substitute 9 for ◢ on 2nd balance so ◇ + 7 = 9 + 1 = 10. Remove 7 from both sides so ◇ = 3. ■◢ = ◇ + 24.

Problem 2: ? = 100

Explanation: Divide both sides on 2nd balance in fifths so ▼ = 8. Substitute 8 for each ▼ on 1st balance so □△ = 48. Divide into thirds so △ = 16. So □● = 32 + 16 = 48. □● + 52 = 100.