



◇ 「콘텐츠산업 진흥법 시행령」 제33조에 의한 표시

1) 제작연월일 : 2016-02-16

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3) 이 콘텐츠는 「콘텐츠산업 진흥법」에 따라 최초 제작일부터 5년간 보호됩니다.

◇ 「콘텐츠산업 진흥법」 외에도 「저작권법」에 의하여 보호되는 콘텐츠의 경우, 그 콘텐츠의 전부 또는 일부를 무단으로 복제하거나 전송하는 것은 콘텐츠산업 진흥법 외에도 저작권법에 의한 법적 책임을 질 수 있습니다.

계산시 참고사항

1. 복잡한 일차식의 덧셈과 뺄셈

(1) 괄호가 있는 일차식

: 괄호가 있으면 괄호 안을 먼저 계산한다. 이때 소괄호 (), 중괄호 { }, 대괄호 [] 순서로 계산한다.

(2) 분수꼴인 일차식

: 분모의 최소공배수로 통분한 다음 분자를 동류항끼리 모아서 계산한다.

분수꼴의 일차식 계산시

분모 통분 시 부호에 유의한다.

2. 문자에 일차식 대입하기

(1) 주어진 식을 간단히 한다.

(2) 괄호를 사용하여 일차식을 대입하여 계산한다.

3. 어떤 식 구하기

(1) '어떤 식' 구하기: 문제에서 말하는 '어떤 식'을 □로 놓고 식을 세운다.

(2) 잘못 계산했을 때

① 잘못 계산하기 전의 '어떤 식'을 찾는다.

② 주어진 계산을 바르게 한다.



괄호가 있는 일차식

▣ 다음 식을 간단히 하여라.

1. $-2x - \{-(1-3x) - 2(3x+2)\}$

2. $-3a + 2\{3a - (a-5) - 1\}$

3. $-7x - 5\{x - 4(2x-3)\}$

4. $6x - 2 - 2[4x - \{x + 2 + 3(2x-1)\}]$

5. $3x + [7 - \{2x - (3x+4)\}]$

6. $3 - \{4x - (x+9)\}$

7. $2x + \{3x - (-2x+5)\}$

8. $-5x + \{x - (3x+4)\}$

9. $-2x - \{8x + (-5x-9)\}$



분수꼴의 일차식

▣ 다음 식을 간단히 하여라.

10. $6x - 7 + 3\{-3x - (4x + 1)\}$

11. $-3x + 8 - \{4x - 3(x - 2)\}$

12. $4x + [8 - \{3x - (5x - 3)\}]$

13. $-x + [5x - 6 + \{9 - (2x - 4)\}]$

14. $-2x + [3x + 4 - \{5x - (3x - 8)\}]$

15. $2x + 5 - [2x - 2\{4x - 2 - (x + 5)\}]$

16. $-3x + 5 + 3[x + 4\{3x + 7 - (4x + 6)\}]$

17. $2x - \{1 - (3x - 4)\} - x$

18. $5a - [3a - 2b - \{2a + 4b - (a - 6b)\}]$

19. $-5x + [2^3x + 2 - \{2 + 3(x - 2)\}]$

20. $\frac{9a-6}{3} - \frac{10a-15}{5}$

21. $-\frac{3}{4}(8x-12) - \frac{2}{3}(3x-9)$

22. $x + 1.2 - 0.5x - 0.5$

23. $\frac{1}{6}x - 4 + \frac{2}{3}x + 9$

24. $\left(\frac{1}{4}x - \frac{5}{6}\right) \div \frac{5}{2}$

25. $\left(\frac{9}{8}x - \frac{15}{4}\right) \div \left(-\frac{9}{4}\right)$

26. $\frac{2(5x-2)}{5} - \frac{3(4x+1)}{4}$

27. $\frac{8a-12}{4} - \frac{6a-15}{3} - \frac{10a+5}{5}$

28. $\frac{x-3}{2} + \frac{2x+1}{3}$

$$29. \frac{3x+5}{3} + \frac{4x-1}{4}$$

$$30. \frac{2x+3}{2} + \frac{3x-2}{4}$$

$$31. \frac{x+2}{9} + \frac{2x-6}{3}$$

$$32. \frac{3x-4}{4} + \frac{-5x+2}{6}$$

$$33. \frac{-3x+8}{10} + \frac{x-4}{4}$$

$$34. \frac{x+3}{3} - \frac{2x+1}{2}$$

$$35. \frac{2x-4}{5} - \frac{x-3}{2}$$

$$36. \frac{2x+3}{2} - \frac{5x-2}{8}$$

$$37. \frac{7x-4}{6} - \frac{3x-2}{3}$$

$$38. \frac{4x-5}{3} - \frac{-2x+7}{4}$$

$$39. \frac{-2x+7}{5} - \frac{5x+2}{3}$$

$$40. \frac{1}{2}(4x+6) - \frac{1}{3}(9x-12)$$

$$41. \frac{2}{3}(12x-6) - \frac{1}{5}(20x-15)$$

$$42. \frac{2x-3}{5} - \frac{3x-1}{2}$$

$$43. \frac{4x-1}{3} - \frac{2x+1}{4} + \frac{x+2}{6}$$

$$44. \frac{4x-3}{3} - \frac{x-1}{2} + \frac{-3x+1}{4}$$

$$45. \frac{-5x+2}{3} - \frac{x-1}{2} + \frac{7x-8}{4}$$

$$46. \frac{x-3}{3} - \frac{2x-1}{4} + \frac{1}{6}(3x-3)$$

$$47. -2a + \left[\frac{3}{2}a + \frac{1}{4} - \left\{ 1 - \left(\frac{1}{4}a - 3 \right) \right\} \right]$$

■ 다음 표의 가로, 세로, 대각선에 놓인 세 식의 합이 모두 같도록 할 때, 빈칸에 들어갈 알맞은 식을 구하여라.

48.

$6x+2$		
	$5x+1$	
$8x+4$		$4x$

49.

$2x+2$		
	$x-1$	$-x+3$
		-4

50.

$2x-2$		
	$5x+1$	
$4x$		$8x+4$

51.

$4x-1$		
	$x+2$	
	$x-4$	$-2x+5$

52.

$-3x+4$		
$-5x-1$	$-x+1$	$3x+3$
	$-9x+5$	

■ 두 일차식 A, B에 대하여 $A \diamond B = A - 2B - 2$ 로 정의할 때, 다음을 계산하여라.

53. $3 \diamond (x+2)$

54. $(3x-1) \diamond (7x-5)$

55. $\left(\frac{2}{3}x+1\right) \diamond \left(-\frac{1}{6}x+3\right)$

56. $(9x-1) \diamond (-5x+3)$

■ 두 일차식 A, B에 대하여 $A * B = \frac{4A-3B}{2}$ 로 정의할 때, 다음을 계산하여라.

57. $(2x+1) * (4x-2)$

58. $(3x+5) * (2x+6)$

59. $(5x+1) * \left(\frac{1}{3}x-6\right)$

60. $(2x+7) * (8x-4)$

■ 두 일차식 A, B 에 대하여 $A \odot B = \frac{5A+3B}{2}$ 로 정의할 때, 다음을 계산하여라.

61. $2x \odot y$

62. $(x-3) \odot (x+5)$

63. $(5x+y) \odot (x-3y)$

64. $(2x+3y) \odot (-6x-3y)$



문자에 일차식 대입하기

■ $A=3x-2, B=2x+5$ 일 때, 다음 식을 x 를 사용하여 나타내어라.

65. $A+B$

66. $A-B$

67. $3A+2B$

68. $4A+3B$

69. $2A-B$

70. $5A-4B$

■ $A=4x+6y, B=3x-9y$ 일 때, 다음 식을 x, y 를 사용하여 나타내어라.

71. $A+(2A+B)$

72. $2A-(3A-2B)$

73. $-2A-B+3(2A+B)$

74. $3(A-B)-(2A-5B)$

75. $A=2-x, B=-3x-2$ 일 때, $3A-2B$ 를 x 에 관한 식으로 나타내어라.

76. $A=4x+5, B=x-1$ 일 때, $2(A-B)-3B$ 를 x 에 관한 식으로 간단히 나타내어라.

77. $A=2x-y, B=x+2y$ 일 때, $3A-2(A-B)$ 를 x 에 관한 식으로 간단히 나타내어라.

78. $A=2x-3$, $B=-x+4$ 일 때, $2A+3B$ 를 x 에 관한 식으로 간단히 나타내어라.

79. $A=7-3x$, $B=x-5$ 일 때, $3A-2(A-B)$ 를 x 에 관한 식으로 간단히 나타내어라.

80. $A=2x+8$, $B=3x-2$ 일 때, $3A-2B$ 를 x 에 관한 식으로 간단히 나타내어라.

81. $A=-x+2y$, $B=-3x-4y$ 일 때, $2A-3B$ 을 x , y 를 사용한 식으로 나타내어라.

82. $A=2x-y$, $B=3x+2y$ 일 때 $2(A-B)-3(A+B)$ 를 x , y 를 사용한 식으로 나타내어라.

83. $A=-x-y+1$, $B=2x-3y-2$ 일 때, $-2(A+3)-3(B-2)$ 를 x , y 를 사용한 식으로 나타내어라.

어떤 식 구하기

■ 다음 □ 안에 알맞은 식을 써넣어라.

84. $\square + (3x-5) = 4x+6$

85. $\square - (2x+3) = 5x-4$

86. $3(x-4) + \square = -2x+5$

87. $2x+3 - \square = -4x+5$

88. $4(3x-2) - \square = 3(x-4)$

89. $-\square + 2(5x-7) = 3x+4$

■ 어떤 다항식에 $3x-5$ 를 더해야 할 것을 잘못하여 뺐더니 $5x-4$ 가 되었다. 다음 물음에 답하여라.

90. 어떤 다항식을 구하여라.

91. 바르게 계산한 식을 구하여라.

■ 어떤 다항식에 $2x+3$ 를 더해야 할 것을 잘못하여 뺐더니 $2x-1$ 이 되었다. 다음 물음에 답하여라.

92. 어떤 다항식을 구하여라.

93. 바르게 계산한 식을 구하여라.

■ 어떤 다항식에 $y-1$ 를 빼야 할 것을 잘못하여 더했더니 $3y-5$ 가 되었다. 다음 물음에 답하여라.

94. 어떤 다항식을 구하여라.

95. 바르게 계산한 식을 구하여라.

■ 어떤 다항식에서 $a+4$ 를 빼야 할 것을 잘못하여 더했더니 $5a+3$ 이 되었다. 다음 물음에 답하여라.

96. 어떤 다항식을 구하여라.

97. 바르게 계산한 식을 구하여라.

■ 어떤 다항식에서 $2x-9$ 를 더해야 할 것을 잘못하여 빼었더니 $-x+7$ 이 되었다. 다음 물음에 답하여라.

98. 어떤 다항식을 구하여라.

99. 바르게 계산한 식을 구하여라.

■ 일차식 $2x-5$ 에서 어떤 식을 빼야 할 것을 잘못하여 더하였더니 $5x+16$ 이 되었다. 다음 물음에 답하여라.

100. 어떤 식을 구하여라.

101. 바르게 계산한 식을 구하여라.

■ 어떤 다항식에 $4x-9y+7$ 을 더해야 할 것을 잘못하여 빼었더니 $2x-3$ 이 되었다. 다음 물음에 답하여라.

102. 어떤 다항식을 구하여라.

103. 바르게 계산한 식을 구하여라.

■ 다항식 A 에서 $5x-1$ 을 뺐더니 $-4x-2$ 가 되었고, 다항식 B 에 $2x+1$ 를 더했더니 $7x-3$ 이 되었다. 다음 물음에 답하여라.

104. 다항식 A 를 구하여라.

105. 다항식 B 를 구하여라.

106. $A-B$ 를 구하여라.

정답 및 해설



1) $x+5$

$$\begin{aligned}\Rightarrow (\text{주어진 식}) &= -2x - (-1 + 3x - 6x - 4) \\ &= -2x - (-3x - 5) \\ &= -2x + 3x + 5 = x + 5\end{aligned}$$

2) $a+8$

$$\begin{aligned}\Rightarrow (\text{주어진 식}) &= -3a + 2(3a - a + 5 - 1) \\ &= -3a + 2(2a + 4) \\ &= -3a + 4a + 8 = a + 8\end{aligned}$$

3) $28x-60$

$$\begin{aligned}\Rightarrow (\text{주어진 식}) &= -7x - 5(x - 8x + 12) = -7x - 5(-7x + 12) \\ &= -7x + 35x - 60 = 28x - 60\end{aligned}$$

4) $12x-4$

$$\begin{aligned}\Rightarrow 6x - 2 - 2[4x - \{x + 2 + 3(2x - 1)\}] \\ = 6x - 2 - 2\{4x - (x + 2 + 6x - 3)\} \\ = 6x - 2 - 2\{4x - (7x - 1)\} = 6x - 2 - 2(4x - 7x + 1) \\ = 6x - 2 - 2(-3x + 1) = 6x - 2 + 6x - 2 = 12x - 4\end{aligned}$$

5) $4x+11$

$$\begin{aligned}\Rightarrow 3x + [7 - \{2x - (3x + 4)\}] \\ = 3x + \{7 - (2x - 3x - 4)\} = 3x + \{7 - (-x - 4)\} \\ = 3x + (7 + x + 4) = 3x + (x + 11) = 3x + x + 11 = 4x + 11\end{aligned}$$

6) $-3x+12$

$$\begin{aligned}\Rightarrow 3 - \{4x - (x + 9)\} &= 3 - (4x - x - 9) \\ &= 3 - (3x - 9) = 3 - 3x + 9 = -3x + 12\end{aligned}$$

7) $7x-5$

$$\begin{aligned}\Rightarrow 2x + \{3x - (-2x + 5)\} &= 2x + (3x + 2x - 5) \\ &= 2x + (5x - 5) = 2x + 5x - 5 = 7x - 5\end{aligned}$$

8) $-7x-4$

$$\begin{aligned}\Rightarrow -5x + \{x - (3x + 4)\} &= -5x + (x - 3x - 4) \\ &= -5x + (-2x - 4) = -5x - 2x - 4 = -7x - 4\end{aligned}$$

9) $-5x+9$

$$\begin{aligned}\Rightarrow -2x - \{8x + (-5x - 9)\} &= -2x - (8x - 5x - 9) \\ &= -2x - (3x - 9) = -2x - 3x + 9 = -5x + 9\end{aligned}$$

10) $-15x-10$

$$\begin{aligned}\Rightarrow 6x - 7 + 3\{-3x - (4x + 1)\} &= 6x - 7 + 3(-3x - 4x - 1) \\ &= 6x - 7 + 3(-7x - 1) = 6x - 7 - 21x - 3 = -15x - 10\end{aligned}$$

11) $-4x+2$

$$\begin{aligned}\Rightarrow -3x + 8 - \{4x - 3(x - 2)\} &= -3x + 8 - (4x - 3x + 6) \\ &= -3x + 8 - (x + 6) = -3x + 8 - x - 6 = -4x + 2\end{aligned}$$

12) $6x+5$

$$\begin{aligned}\Rightarrow 4x + [8 - \{3x - (5x - 3)\}] &= 4x + \{8 - (3x - 5x + 3)\} \\ &= 4x + \{8 - (-2x + 3)\} = 4x + (8 + 2x - 3) = 4x + (2x + 5) \\ &= 4x + 2x + 5 = 6x + 5\end{aligned}$$

13) $2x+7$

$$\begin{aligned}\Rightarrow -x + [5x - 6 + \{9 - (2x - 4)\}] \\ = -x + \{5x - 6 + (9 - 2x + 4)\} \\ = -x + \{5x - 6 + (-2x + 13)\} \\ = -x + (5x - 6 - 2x + 13) = -x + (3x + 7) \\ = -x + 3x + 7 = 2x + 7\end{aligned}$$

14) $-x-4$

$$\begin{aligned}\Rightarrow -2x + [3x + 4 - \{5x - (3x - 8)\}] \\ = -2x + \{3x + 4 - (5x - 3x + 8)\} \\ = -2x + \{3x + 4 - (2x + 8)\} \\ = -2x + (3x + 4 - 2x - 8) = -2x + (x - 4) = -2x + x - 4 \\ = -x - 4\end{aligned}$$

15) $6x-9$

$$\begin{aligned}\Rightarrow 2x + 5 - [2x - 2\{4x - 2 - (x + 5)\}] \\ = 2x + 5 - \{2x - 2(4x - 2 - x - 5)\} = 2x + 5 - \{2x - 2(3x - 7)\} \\ = 2x + 5 - (2x - 6x + 14) = 2x + 5 - (-4x + 14) \\ = 2x + 5 + 4x - 14 = 6x - 9\end{aligned}$$

16) $-12x+17$

$$\begin{aligned}\Rightarrow -3x + 5 + 3[x + 4\{3x + 7 - (4x + 6)\}] \\ = -3x + 5 + 3\{x + 4(3x + 7 - 4x - 6)\} \\ = -3x + 5 + 3\{x + 4(-x + 1)\} \\ = -3x + 5 + 3(x - 4x + 4) = -3x + 5 + 3(-3x + 4) \\ = -3x + 5 - 9x + 12 = -12x + 17\end{aligned}$$

17) $4x-5$

$$\Rightarrow 2x - (1 - 3x + 4) - x = 2x - 1 + 3x - 4 - x = 4x - 5$$

18) $3a+12b$

$$\begin{aligned}\Rightarrow 5a - [3a - 2b - \{2a + 4b - (a - 6b)\}] \\ = 5a - \{3a - 2b - (2a + 4b - a + 6b)\} \\ = 5a - \{3a - 2b - (a + 10b)\} \\ = 5a - (3a - 2b - a - 10b) \\ = 5a - (2a - 12b) \\ = 3a + 12b\end{aligned}$$

19) 6

$$\begin{aligned}\Rightarrow (\text{주어진 식}) &= -5x + \{8x + 2 - (2 + 3x - 6)\} \\ &= -5x + \{8x + 2 - (3x - 4)\} \\ &= -5x + (8x + 2 - 3x + 4) \\ &= -5x + (5x + 6) \\ &= 6\end{aligned}$$

20) $a+1$

$$\begin{aligned}\Rightarrow (\text{주어진 식}) &= 3a - 2 - (2a - 3) = 3a - 2 - 2a + 3 = a + 1\end{aligned}$$

21) $-8x+15$

\Rightarrow (주어진 식) $= -6x+9-2x+6 = -8x+15$

22) $0.5x+0.7$

\Rightarrow (주어진 식) $= x-0.5x+1.2-0.5 = 0.5x+0.7$

23) $\frac{5}{6}x+5$

\Rightarrow (주어진 식) $= \frac{1}{6}x + \frac{2}{3}x - 4 + 9 = \frac{1}{6}x + \frac{4}{6}x + 5 = \frac{5}{6}x + 5$

24) $\frac{1}{10}x - \frac{1}{3}$

$\Rightarrow \left(\frac{1}{4}x - \frac{5}{6}\right) \div \frac{5}{2} = \left(\frac{1}{4}x - \frac{5}{6}\right) \times \frac{2}{5} = \frac{1}{10}x - \frac{1}{3}$

25) $-\frac{1}{2}x + \frac{5}{3}$

$\Rightarrow \left(\frac{9}{8}x - \frac{15}{4}\right) \div \left(-\frac{9}{4}\right) = \left(\frac{9}{8}x - \frac{15}{4}\right) \times \left(-\frac{4}{9}\right) = -\frac{1}{2}x + \frac{5}{3}$

26) $-x - \frac{31}{20}$

\Rightarrow 20으로 통분하면
$$\frac{8(5x-2)-15(4x+1)}{20} = \frac{40x-16-60x-15}{20}$$
$$= \frac{-20x-31}{20}$$
$$= -x - \frac{31}{20}$$

27) $-2a+1$

$\Rightarrow (2a-3)-(2a-5)-(2a+1)$
$$= 2a-3-2a+5-2a-1 = -2a+1$$

28) $\frac{7x-7}{6}$

$\Rightarrow \frac{x-3}{2} + \frac{2x+1}{3} = \frac{3(x-3)+2(2x+1)}{6}$
$$= \frac{3x-9+4x+2}{6} = \frac{7x-7}{6}$$

29) $\frac{24x+17}{12}$

$\Rightarrow \frac{3x+5}{3} + \frac{4x-1}{4} = \frac{4(3x+5)+3(4x-1)}{12}$
$$= \frac{12x+20+12x-3}{12} = \frac{24x+17}{12}$$

30) $\frac{7x+4}{4}$

$\Rightarrow \frac{2x+3}{2} + \frac{3x-2}{4} = \frac{2(2x+3)+(3x-2)}{4}$

$$= \frac{4x+6+3x-2}{4} = \frac{7x+4}{4}$$

31) $\frac{7x-16}{9}$

$\Rightarrow \frac{x+2}{9} + \frac{2x-6}{3} = \frac{(x+2)+3(2x-6)}{9}$
$$= \frac{x+2+6x-18}{9} = \frac{7x-16}{9}$$

32) $\frac{-x-8}{12}$

$\Rightarrow \frac{3x-4}{4} + \frac{-5x+2}{6} = \frac{3(3x-4)+2(-5x+2)}{12}$
$$= \frac{9x-12-10x+4}{12} = \frac{-x-8}{12}$$

33) $\frac{-x-4}{20}$

$\Rightarrow \frac{-3x+8}{10} + \frac{x-4}{4} = \frac{2(-3x+8)+5(x-4)}{20}$
$$= \frac{-6x+16+5x-20}{20} = \frac{-x-4}{20}$$

34) $\frac{-4x+3}{6}$

$\Rightarrow \frac{x+3}{3} - \frac{2x+1}{2} = \frac{2(x+3)-3(2x+1)}{6}$
$$= \frac{2x+6-6x-3}{6} = \frac{-4x+3}{6}$$

35) $\frac{-x+7}{10}$

$\Rightarrow \frac{2x-4}{5} - \frac{x-3}{2} = \frac{2(2x-4)-5(x-3)}{10}$
$$= \frac{4x-8-5x+15}{10} = \frac{-x+7}{10}$$

36) $\frac{3x+14}{8}$

$\Rightarrow \frac{2x+3}{2} - \frac{5x-2}{8} = \frac{4(2x+3)-(5x-2)}{8}$
$$= \frac{8x+12-5x+2}{8} = \frac{3x+14}{8}$$

37) $\frac{x}{6}$

$\Rightarrow \frac{7x-4}{6} - \frac{3x-2}{3} = \frac{(7x-4)-2(3x-2)}{6}$
$$= \frac{7x-4-6x+4}{6} = \frac{x}{6}$$

38) $\frac{22x-41}{12}$

$\Rightarrow \frac{4x-5}{3} - \frac{-2x+7}{4} = \frac{4(4x-5)-3(-2x+7)}{12}$

$$= \frac{16x-20+6x-21}{12} = \frac{22x-41}{12}$$

$$39) \frac{-31x+11}{15}$$

$$\Rightarrow \frac{-2x+7}{5} - \frac{5x+2}{3} = \frac{3(-2x+7)-5(5x+2)}{15}$$

$$= \frac{-6x+21-25x-10}{15} = \frac{-31x+11}{15}$$

$$40) -x+7$$

$$\Rightarrow \frac{1}{2}(4x+6) - \frac{1}{3}(9x-12) = 2x+3-3x+4 = -x+7$$

$$41) 4x-1$$

$$\Rightarrow \frac{2}{3}(12x-6) - \frac{1}{5}(20x-15) = 8x-4-4x+3 = 4x-1$$

$$42) \frac{-11x-1}{10}$$

$$\Rightarrow (\text{주어진 식}) = \frac{2(2x-3)-5(3x-1)}{10}$$

$$= \frac{4x-6-15x+5}{10} = \frac{-11x-1}{10}$$

$$43) x - \frac{1}{4}$$

\Rightarrow 12로 통분하면

$$\frac{4(4x-1)-3(2x+1)+2(x+2)}{6}$$

$$= \frac{16x-4-6x-3+2x+4}{12} = \frac{12x-3}{12} = x - \frac{1}{4}$$

$$44) \frac{x}{12} - \frac{1}{4}$$

\Rightarrow 12으로 통분하면

$$\frac{4(4x-3)-6(x-1)+3(-3x+1)}{12}$$

$$= \frac{16x-12-6x+6-9x+3}{12}$$

$$= \frac{x-3}{12}$$

$$= \frac{x}{12} - \frac{3}{12}$$

$$= \frac{x}{12} - \frac{1}{4}$$

$$45) -\frac{5}{12}x - \frac{5}{6}$$

\Rightarrow 12으로 통분시키면

$$\frac{4(-5x+2)-6(x-1)+3(7x-8)}{12}$$

$$= \frac{-20x+8-6x+6+21x-24}{12}$$

$$= \frac{-5x-10}{12} = -\frac{5}{12}x - \frac{5}{6}$$

$$46) \frac{x}{3} - \frac{5}{4}$$

\Rightarrow 12로 통분하면

$$\frac{4(x-3)-3(2x-1)+2(3x-3)}{12}$$

$$= \frac{4x-12-6x+3+6x-6}{12}$$

$$= \frac{4x-15}{12}$$

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

$$47) -\frac{1}{4}a - \frac{15}{4}$$

$$\Rightarrow -2a + \left\{ \frac{3}{2}a + \frac{1}{4} - \left(1 - \frac{1}{4}a + 3 \right) \right\}$$

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

$$= -2a + \left(\frac{7}{4}a - \frac{15}{4} \right)$$

$$= -\frac{1}{4}a - \frac{15}{4}$$

$$48) \text{ 대각선의 합이 } (6x+2) + (5x+1) + 4x = 15x+3$$

$6x+2$	$7x+3$	$2x-2$
$x-3$	$5x+1$	$9x+5$
$8x+4$	$3x-1$	$4x$

$$49) \text{ 대각선의 합은 } (2x+2) + (x-1) + (-4) = 3x-3$$

$2x+2$	$-3x-3$	$4x-2$
$3x-5$	$x-1$	$-x+3$
$-2x$	$5x+1$	-4

$$50) \text{ 대각선의 합은 } (2x-2) + (5x+1) + (8x+4) = 15x+3$$

$2x-2$	$7x+3$	$6x+2$
$9x+5$	$5x+1$	$x-3$
$4x$	$3x-1$	$8x+4$

$$51) (\text{대각선의 합}) = (4x-1) + (x+2) + (-2x+5) = 3x+6$$

$4x-1$	$x+8$	$-2x-1$
$-5x+2$	$x+2$	$7x+2$
$4x+5$	$x-4$	$-2x+5$

$$52) \text{ 두 번째 줄 가로의 합은}$$

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

$-3x+4$	$7x-3$	$-7x+2$
$-5x-1$	$-x+1$	$3x+3$
$5x$	$-9x+5$	$x-2$

$$53) -2x-3$$

$$\Rightarrow 3 \diamond (x+2) = 3 - 2(x+2) - 2 = 3 - 2x - 4 - 2 = -2x - 3$$

$$54) -11x+7$$

$$\Rightarrow (3x-1) \diamond (7x-5) = 3x - 1 - 14x + 10 - 2 = -11x + 7$$

$$55) x-7$$

$$\begin{aligned} \Rightarrow & \left(\frac{2}{3}x+1\right) \diamond \left(-\frac{1}{6}x+3\right) \\ & = \left(\frac{2}{3}x+1\right) - 2\left(-\frac{1}{6}x+3\right) - 2 = \frac{2}{3}x+1 + \frac{1}{3}x-6-2 = x-7 \end{aligned}$$

$$56) 19x-9$$

$$\begin{aligned} \Rightarrow & (9x-1) \diamond (-5x+3) \\ & = 9x - 1 - 2(-5x+3) - 2 = 9x - 1 + 10x - 6 - 2 = 19x - 9 \end{aligned}$$

$$57) -2x+5$$

$$\begin{aligned} \Rightarrow & (2x+1) * (4x-2) \\ & = \frac{4(2x+1) - 3(4x-2)}{2} \\ & = \frac{8x+4-12x+6}{2} = \frac{-4x+10}{2} = -2x+5 \end{aligned}$$

$$58) 3x+1$$

$$\begin{aligned} \Rightarrow & (3x+5) * (2x+6) \\ & = \frac{4(3x+5) - 3(2x+6)}{2} \\ & = \frac{12x+20-6x-18}{2} = \frac{6x+2}{2} = 3x+1 \end{aligned}$$

$$59) \frac{19}{2}x+11$$

$$\begin{aligned} \Rightarrow & (5x+1) * \left(\frac{1}{3}x-6\right) \\ & = \frac{4(5x+1) - 3\left(\frac{1}{3}x-6\right)}{2} \\ & = \frac{20x+4-x+18}{2} = \frac{19x+22}{2} = \frac{19}{2}x+11 \end{aligned}$$

$$60) -8x+20$$

$$\begin{aligned} \Rightarrow & (2x+7) * (8x-4) \\ & = \frac{4(2x+7) - 3(8x-4)}{2} \\ & = \frac{8x+28-24x+12}{2} = \frac{-16x+40}{2} = -8x+20 \end{aligned}$$

$$61) 5x + \frac{3}{2}y$$

$$\Rightarrow 2x \odot y = \frac{5(2x)+3y}{2} = 5x + \frac{3}{2}y$$

$$62) 4x$$

$$\begin{aligned} \Rightarrow & (x-3) \odot (x+5) \\ & = \frac{5(x-3)+3(x+5)}{2} \\ & = \frac{5x-15+3x+15}{2} = \frac{8x}{2} = 4x \end{aligned}$$

$$63) 14x-2y$$

$$\begin{aligned} \Rightarrow & (5x+y) \odot (x-3y) \\ & = \frac{5(5x+y)+3(x-3y)}{2} \\ & = \frac{25x+5y+3x-9y}{2} = \frac{28x-4y}{2} = 14x-2y \end{aligned}$$

$$64) -4x+3y$$

$$\begin{aligned} \Rightarrow & (2x+3y) \odot (-6x-3y) \\ & = \frac{5(2x+3y)+3(-6x-3y)}{2} \\ & = \frac{10x+15y-18x-9y}{2} = \frac{-8x+6y}{2} = -4x+3y \end{aligned}$$

$$65) 5x+3$$

$$\begin{aligned} \Rightarrow & A+B = (3x-2) + (2x+5) = 3x-2+2x+5 \\ & = 5x+3 \end{aligned}$$

$$66) x-7$$

$$\Rightarrow A-B = (3x-2) - (2x+5) = 3x-2-2x-5 = x-7$$

$$67) 13x+4$$

$$\begin{aligned} \Rightarrow & 3A+2B = 3(3x-2) + 2(2x+5) = 9x-6+4x+10 \\ & = 13x+4 \end{aligned}$$

$$68) 18x+7$$

$$\begin{aligned} \Rightarrow & 4A+3B = 4(3x-2) + 3(2x+5) = 12x-8+6x+15 \\ & = 18x+7 \end{aligned}$$

$$69) 4x-9$$

$$\Rightarrow 2A-B = 2(3x-2) - (2x+5) = 6x-4-2x-5 = 4x-9$$

$$70) 7x-30$$

$$\begin{aligned} \Rightarrow & 5A-4B = 5(3x-2) - 4(2x+5) = 15x-10-8x-20 \\ & = 7x-30 \end{aligned}$$

$$71) 15x+9y$$

$$\begin{aligned} \Rightarrow & A+(2A+B) = A+2A+B = 3A+B \\ & = 3(4x+6y) + (3x-9y) = 12x+18y+3x-9y \\ & = 15x+9y \end{aligned}$$

$$72) 2x-24y$$

$$\Rightarrow 2A-(3A-2B) = 2A-3A+2B = -A+2B$$

$$=-(4x+6y)+2(3x-9y)=-4x-6y+6x-18y=2x-24y$$

73) $22x+6y$

$$\begin{aligned}\Rightarrow -2A-B+3(2A+B) &= -2A-B+6A+3B \\ &= 4A+2B = 4(4x+6y)+2(3x-9y) = 16x+24y+6x-18y \\ &= 22x+6y\end{aligned}$$

74) $10x-12y$

$$\begin{aligned}\Rightarrow 3(A-B)-(2A-5B) &= 3A-3B-2A+5B \\ &= A+2B = (4x+6y)+2(3x-9y) = 4x+6y+6x-18y \\ &= 10x-12y\end{aligned}$$

75) $3x+10$

$$\begin{aligned}\Rightarrow 3A-2B &= 3(2-x)-2(-3x-2) \\ &= 6-3x+6x+4 = 3x+10\end{aligned}$$

76) $3x+15$

$$\begin{aligned}\Rightarrow 2(A-B)-3B &= 2A-2B-3B \\ &= 2A-5B \\ &= 2(4x+5)-5(x-1) \\ &= 8x+10-5x+5 \\ &= 3x+15\end{aligned}$$

77) $4x+3y$

$$\begin{aligned}\Rightarrow 3A-2(A-B) &= 3A-2A+2B = A+2B \\ &= (2x-y)+2(x+2y) \\ &= 2x-y+2x+4y \\ &= 4x+3y\end{aligned}$$

78) $x+6$

$$\begin{aligned}\Rightarrow 2(2x-3)+3(-x+4) \\ &= 4x-6-3x+12 \\ &= x+6\end{aligned}$$

79) $-x-3$

80) 28

81) $7x+16y$

82) $-17x-9y$

83) $-4x+11y+4$

84) $x+11$

$$\begin{aligned}\Rightarrow \square &= 4x+6-(3x-5) \\ &= 4x+6-3x+5 = x+11\end{aligned}$$

85) $7x-1$

$$\Rightarrow \square = 5x-4+(2x+3) = 7x-1$$

86) $-5x+17$

$$\begin{aligned}\Rightarrow \square &= -2x+5-3(x-4) \\ &= -2x+5-3x+12 = -5x+17\end{aligned}$$

87) $6x-2$

$$\begin{aligned}\Rightarrow \square &= 2x+3-(-4x+5) \\ &= 2x+3+4x-5 = 6x-2\end{aligned}$$

88) $9x+4$

$$\begin{aligned}\Rightarrow \square &= 4(3x-2)-3(x-4) \\ &= 12x-8-3x+12 = 9x+4\end{aligned}$$

89) $7x-18$

$$\begin{aligned}\Rightarrow \square &= 2(5x-7)-(3x+4) \\ &= 10x-14-3x-4 = 7x-18\end{aligned}$$

90) $8x-9$

$$\begin{aligned}\Rightarrow \text{어떤 다항식을 } \square \text{라고 하면} \\ \square - (3x-5) &= 5x-4 \\ \therefore \square &= 5x-4+(3x-5) = 8x-9\end{aligned}$$

91) $11x-14$

$$\Rightarrow 8x-9+(3x-5) = 11x-14$$

92) $4x+2$

$$\begin{aligned}\Rightarrow \text{어떤 다항식을 } \square \text{라고 하면} \\ \square - (2x+3) &= 2x-1 \\ \therefore \square &= 2x-1+(2x+3) = 4x+2\end{aligned}$$

93) $6x+5$

$$\Rightarrow 4x+2+(2x+3) = 6x+5$$

94) $2y-4$

$$\begin{aligned}\Rightarrow \text{어떤 다항식을 } \square \text{라고 하면} \\ \square + (y-1) &= 3y-5 \\ \therefore \square &= 3y-5-(y-1) = 3y-5-y+1 = 2y-4\end{aligned}$$

95) $y-3$

$$\Rightarrow 2y-4-(y-1) = y-3$$

96) $4a-1$

$$\begin{aligned}\Rightarrow \text{어떤 다항식을 } \square \text{라고 하면} \\ \square + (a+4) &= 5a+3 \\ \therefore \square &= 5a+3-(a+4) = 4a-1\end{aligned}$$

97) $3a-5$

$$\Rightarrow 4a-1-(a+4) = 3a-5$$

98) $x-2$

$$\begin{aligned}\Rightarrow \text{어떤 다항식을 } \square \text{라고 하면} \\ \square - (2x-9) &= -x+7 \\ \square &= (-x+7)+(2x-9) = x-2\end{aligned}$$

99) $3x-11$

$$\Rightarrow \text{바르게 계산하면 } (x-2)+(2x-9) = 3x-11$$

100) $3x+21$

$$\Rightarrow (2x-5)+(\text{어떤 식}) = 5x+16$$

$$(\text{어떤 식}) = (5x+16) - (2x-5) = 3x+21$$

$$101) -x-26$$

$$\Rightarrow (2x-5) - (3x+21) = 2x-5-3x-21 = -x-26$$

$$102) 6x-9y+4$$

$$103) 10x-18y+11$$

$$104) x-3$$

$$\Rightarrow A - (5x-1) = -4x-2 \text{ 에서}$$

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

$$105) 5x-4$$

$$\Rightarrow B + (2x+1) = 7x-3 \text{ 에서}$$

$$B = (7x-3) - (2x+1) = 5x-4$$

$$106) -4x+1$$

$$\Rightarrow A - B = (x-3) - (5x-4) = x-3-5x+4 = -4x+1$$