



◇ 「콘텐츠산업 진흥법 시행령」 제33조에 의한 표시

1) 제작연월일 : 2016-02-16

2) 제작자 : 교육지대(주)

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. 괄호가 있는 연립부등식

분배법칙을 이용하여 괄호를 풀어 간단히 정리한 후 부등식을 푼다.

2. 계수가 분수 또는 소수인 연립부등식

(1) 계수가 분수인 연립부등식: 양변에 분모의 최소공배수를 곱하여 계수를 정수로 바꾸고 푼다.

(2) 계수가 소수인 연립부등식: 양변에 10의 거듭제곱을 곱하여 계수를 정수로 바꾸고 푼다.

3. $A < B < C$ 꼴의 연립부등식: $\begin{cases} A < B \\ B < C \end{cases}$ 꼴로 바꾸어 푼다.

4. 특수한 해를 갖는 연립부등식

(1) 해가 1개인 경우: $\begin{cases} x \leq a \\ x \geq a \end{cases} \Rightarrow x = a$

(2) 해가 없는 경우: 수직선에 두 부등식의 해를 나타냈을 때 공통부분이 없다.

① $\begin{cases} x \leq a \\ x > b \end{cases}$ (단, $a < b$) \Rightarrow ② $\begin{cases} x \leq a \\ x > a \end{cases} \Rightarrow$ ③ $\begin{cases} x < a \\ x > a \end{cases} \Rightarrow$ 💬 $A < B < C$ 꼴의 부등식 계산시

$\begin{cases} A < B \\ A < C \end{cases}$ 또는 $\begin{cases} A < C \\ B < C \end{cases}$ 로 바꾸지 않
도록 주의한다.



괄호가 있는 연립부등식

▣ 다음 연립부등식을 풀어라.

1.
$$\begin{cases} x - 2(3 - x) \leq 0 \\ 2x - 4(1 - 2x) \leq 6 \end{cases}$$

2.
$$\begin{cases} 3x - 1 \leq 2x - 3 \\ 2(x - 2) < x + 2 \end{cases}$$

3.
$$\begin{cases} x + 3 < 2x + 3 \\ 3(x - 1) \leq x + 1 \end{cases}$$

4.
$$\begin{cases} 4x - 1 \geq 3(x - 2) \\ 8 - 3(x - 1) > 2x + 1 \end{cases}$$

5.
$$\begin{cases} 5x - 3 > 12 \\ 3(x + 1) \leq x + 15 \end{cases}$$

6.
$$\begin{cases} 3(x + 2) - 4 \leq 5 \\ x - 3 \leq 3(x - 2) + 9 \end{cases}$$

7.
$$\begin{cases} x - 1 \leq 6 \\ 2(x - 3) + 3 > 1 \end{cases}$$

$$8. \begin{cases} x+2 \leq 4 \\ 4(x+2)-1 > -5 \end{cases}$$

$$9. \begin{cases} 2(x-3) \leq x \\ 5x+2 > 3(x-2) \end{cases}$$

$$10. \begin{cases} 4(2x-5) < -(x+2) \\ 5(3x+1) > -(9-8x) \end{cases}$$

$$11. \begin{cases} 4(x+1) > 3(x-1) \\ 2x-3 < x+2 \end{cases}$$

$$12. \begin{cases} 2(x-3)+5 \leq 3 \\ 3(2x-1)-(4x-1) < 6 \end{cases}$$

$$13. \begin{cases} 3(x+1)+5 \leq 2(x+3)+3 \\ 5x-2 > 3x-6 \end{cases}$$

$$14. \begin{cases} 4(x+1) < 3x+5 \\ x > 2x+3 \end{cases}$$

$$15. \begin{cases} x-3 > -x+1 \\ 5(x-3) \geq 3x-7 \end{cases}$$

$$16. \begin{cases} x-7 \leq 2x+3 \\ 4(x+3) \geq 3(x+4) \end{cases}$$

$$17. \begin{cases} -x+5 > 2(x+1) \\ 2(x-3) < 3(x-1) \end{cases}$$

$$18. \begin{cases} 3(x-2) \leq 2(x-1) \\ 3(x-3) < x+5 \end{cases}$$

$$19. \begin{cases} 2(2x-1) > 4-(x+1) \\ 6x+4 \leq 7x+5 \end{cases}$$

$$20. \begin{cases} 4x-2 > 2+x-(2-2x) \\ 5-2(x+1) \leq -x+2 \end{cases}$$

$$21. \begin{cases} 3x-4 \leq 2x+1 \\ 4(x-1)+2 < 5x+1 \end{cases}$$

$$22. \begin{cases} 2(x-1) < x-3 \\ 3x-1 \leq 2(x+1) \end{cases}$$



계수가 분수 또는 소수인 연립부등식

■ 다음 연립부등식을 풀어라.

$$23. \begin{cases} \frac{x-1}{4} > \frac{x-4}{5} \\ \frac{2}{3}x-5 \geq \frac{3}{2}x \end{cases}$$

$$24. \begin{cases} \frac{1}{5}x + \frac{4}{15} \geq -\frac{1}{3} \\ \frac{1}{3}x + \frac{1}{2} \leq \frac{1}{6} \end{cases}$$

$$25. \begin{cases} \frac{3}{4}x + \frac{1}{2} > -1 \\ x - \frac{4}{3} \leq \frac{1}{2}x + \frac{7}{6} \end{cases}$$

$$26. \begin{cases} \frac{x+1}{4} + \frac{x-3}{3} > -\frac{1}{6} \\ 2x-5 < x+1 \end{cases}$$

$$27. \begin{cases} \frac{7}{12}x + \frac{1}{6} \geq \frac{2}{3}x + \frac{3}{4} \\ \frac{x+5}{3} - \frac{x+1}{2} \geq \frac{2}{3} \end{cases}$$

$$28. \begin{cases} \frac{1}{3}x - 2 \leq \frac{1}{4}x + 1 \\ \frac{2}{3}x - 7 \geq 9 \end{cases}$$

$$29. \begin{cases} \frac{2}{3}x - 3 < \frac{1}{2}x - 2 \\ \frac{1}{4}x + 1 \leq \frac{1}{3}x + 2 \end{cases}$$

$$30. \begin{cases} \frac{x-3}{2} \geq \frac{2x-5}{3} \\ \frac{1}{3}x < \frac{1}{4}x + \frac{1}{6} \end{cases}$$

$$31. \begin{cases} \frac{x-1}{2} \leq \frac{4x+1}{3} \\ \frac{x+3}{4} < \frac{5x+1}{6} \end{cases}$$

$$32. \begin{cases} \frac{x}{2} - 3 < \frac{x}{4} - 1 \\ \frac{2x+1}{6} \geq \frac{x+2}{4} \end{cases}$$

$$33. \begin{cases} \frac{x+1}{4} \geq \frac{x+2}{5} \\ -x-1 \geq \frac{-2-7x}{6} \end{cases}$$

$$34. \begin{cases} 0.2x + 0.6 \leq 0.7x \\ \frac{5}{2}x - 3 \leq 5 \end{cases}$$

$$35. \begin{cases} 1.6x + 1.2 \leq \frac{4}{5}x - 2 \\ 3 - \frac{x-1}{4} > \frac{2x-1}{2} \end{cases}$$

$$36. \begin{cases} \frac{1}{2}x + \frac{2}{3}x < x - \frac{7}{6} \\ \frac{2x-1}{3} + 0.4 < 0.2(3x-1) \end{cases}$$

$$37. \begin{cases} 4x - 5 < 7 \\ 0.3x - 0.1 \geq 0.2 \end{cases}$$

$$38. \begin{cases} 2x - 3 \geq x - 2 \\ 0.3x + 0.6 \geq 1.2 \end{cases}$$

$$39. \begin{cases} 4x - 1 < 5x + 1 \\ 0.2x + 0.5 > 0.4x + 0.1 \end{cases}$$

$$40. \begin{cases} \frac{x+1}{3} < \frac{x+3}{4} \\ 0.6x - 0.3 \geq 0.2(x-1) \end{cases}$$

$$41. \begin{cases} 0.5x + 0.2 \leq 0.2(x + 3) \\ \frac{3}{4}x + \frac{1}{3} > \frac{1}{12}x - 1 \end{cases}$$

$$42. \begin{cases} 2x - 3 < \frac{1}{2}x + 5 \\ 0.3x - 1 \leq \frac{3}{4}x - 0.1 \end{cases}$$

$$43. \begin{cases} \frac{x-3}{4} < \frac{2x-6}{5} \\ 0.6x - 0.3 < \frac{x+1}{2} \end{cases}$$

$$44. \begin{cases} 0.2x - 1.3 \leq 0.7x + 1.2 \\ \frac{x}{2} - \frac{x-1}{3} < 1 \end{cases}$$

$$45. \begin{cases} 0.3x - 1 \leq 0.1x + 3.4 \\ \frac{x+1}{2} - \frac{7x+5}{4} \leq -2 \end{cases}$$

$$46. \begin{cases} \frac{4x+1}{2} \leq x - \frac{x-1}{3} \\ 0.1x - 3 < 1.4 - (4 - 0.2x) \end{cases}$$

$$47. \begin{cases} -x - \frac{x-5}{3} > 4 \\ 0.7x - 1.35 < \frac{x}{5} - \frac{1}{2} \end{cases}$$

$$48. \begin{cases} -2(2x-3) \geq 10 \\ 0.3x + 0.1 > 0.1x - 0.7 \end{cases}$$

$$49. \begin{cases} 0.6x + 0.4 \geq 0.2(x + 4) \\ 0.3x - 0.2 > 0.5(x - 2) \end{cases}$$

$$50. \begin{cases} 0.07x - 0.02 < 0.04x + 0.01 \\ 0.03x - 0.02 \leq 0.05x + 0.04 \end{cases}$$

$$51. \begin{cases} 1.3x + 0.8 < 0.4x - 1 \\ 1.1x + 0.4 \leq 0.5x - 2 \end{cases}$$

$$52. \begin{cases} 0.02x - 0.14 < 0.04x \\ 0.5x + 0.4 \leq 0.2x - 0.5 \end{cases}$$

$$53. \begin{cases} 0.3x + 0.8 \geq -0.7 \\ 0.5x + 0.4 \geq 0.7x \end{cases}$$

$$54. \begin{cases} 0.3x + 0.2 \geq -0.7 \\ 0.2x - 0.5 < 0.3 \end{cases}$$

$$55. \begin{cases} 0.2x - 1.8 < 0.5x \\ 0.4x + 2.5 < 0.9 \end{cases}$$

$$56. \begin{cases} 0.6x + 0.2 < 0.3x - 0.7 \\ 0.04x + 0.13 < 0.02x + 0.09 \end{cases}$$

$$57. \begin{cases} 0.3x - 1 < 0.7x + 0.6 \\ 0.2x + 1.05 \geq 0.5x - 0.45 \end{cases}$$

 $A < B < C$ 꼴의 연립부등식

▣ 다음 연립부등식을 풀어라.

58. $-1 \leq x+4 < 7$

59. $2x-3 < 5 < x+7$

60. $-8 \leq 3x+4 < 13$

61. $-7 \leq 3x-1 \leq 2$

62. $2x-3 < 3x+5 \leq x+9$

63. $8x+1 < 2x+7 \leq -3(x+1)$

64. $-2 \leq \frac{x-2}{3} < 3$

65. $3x-4 \leq x+2 \leq 2x$

66. $7x-4 < 4x+5 \leq 5x+6$

67. $2(x-2) \leq 3x+1 < x+11$

68. $-4 < \frac{7-3x}{2} < 5$

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

70. $5x-6 < 3x+1 \leq \frac{7x+9}{2}$

71. $3x+5 < 4x+7 < x+10$

72. $2x+2 < \frac{3x+1}{2} < \frac{1}{2}x-0.1$

73. $4x-1 < x+5 \leq 3x+7$

74. $x-2 \leq 2x-3 < 3x$

75. $2x-5 \leq 4x-1 \leq 3x+8$

76. $-x+1 < 2x-5 < 4x-3$

77. $0.3x+0.4 \leq 0.1x+0.2 < 0.2x+0.7$

78. $1 < -2x-3 < 3$



특수한 해를 갖는 연립부등식

▣ 다음 연립부등식을 풀어라.

$$79. \quad 2(x-1) < 3x+4 \leq x+2$$

$$80. \quad -8+x < 4x-5 \leq 2(3x-5)$$

$$81. \quad -11 < 4x+1 \leq 9$$

$$82. \quad 5(x-1) \leq 3x+1 < 4x+2$$

$$83. \quad 2x-3 < 3(x+1) \leq 2x+10$$

$$84. \quad -2x+3 \leq x+6 < -2x+18$$

$$85. \quad x-3 < \frac{x-5}{2} < 3x$$

$$86. \quad -4x+5 < 2x+17 \leq 12-(x-8)$$

$$87. \quad 3x-11 \leq 2(3x-1) < 4x+3$$

$$88. \quad \frac{5x+4}{6} \leq \frac{4x-1}{2} < x+3$$

$$89. \quad 2x-7 \leq \frac{3x+2}{5} < 4x-3$$

$$90. \quad \begin{cases} x-2 \geq 3 \\ x+1 \leq 6 \end{cases}$$

$$91. \quad \begin{cases} 2x-1 \geq 5 \\ -x < -2x+3 \end{cases}$$

$$92. \quad \begin{cases} 3x-6 < x \\ 2x+1 \leq 3x-4 \end{cases}$$

$$93. \quad \begin{cases} x \leq 3 \\ x \geq 3 \end{cases}$$

$$94. \quad \begin{cases} x \leq 2 \\ x > 2 \end{cases}$$

$$95. \quad \begin{cases} x < -3 \\ x > -3 \end{cases}$$

$$96. \quad \begin{cases} x \geq 3 \\ x < -1 \end{cases}$$

$$97. \quad \begin{cases} x \geq 1 \\ x \leq 1 \end{cases}$$

$$98. \quad \begin{cases} 2x+7 \leq 3 \\ 3x-2 \geq 4 \end{cases}$$

$$99. \quad \begin{cases} 2x+1 \leq 3x-2 \\ x-4 \geq 2x-3 \end{cases}$$

$$100. \begin{cases} 5x-2 < 3x+2 \\ 2x-1 > -x+5 \end{cases}$$

$$101. \begin{cases} x+1 \leq 4 \\ x-6 \geq 3 \end{cases}$$

$$102. \begin{cases} x+7 \geq 7 \\ x-4 \leq -5 \end{cases}$$

$$103. \begin{cases} -x+3 \geq 2 \\ 7x-6 > 2x-1 \end{cases}$$

$$104. \begin{cases} -3(x-2) < 2x-4 \\ 6-3x \geq x+2 \end{cases}$$

$$105. \begin{cases} 4-3x > -8 \\ -3x-1 < -13 \end{cases}$$

$$106. \begin{cases} 3(x+1)-1 \geq 8 \\ 2(2x+3)-(3x+4) < 4 \end{cases}$$

$$107. \begin{cases} 5x-3 \leq 7 \\ -4x \leq -8 \end{cases}$$

$$108. \begin{cases} x-3 \leq 2x-1 \\ 3x+5 \leq x+1 \end{cases}$$

$$109. \begin{cases} x-1 \leq 5 \\ x+4 \geq 10 \end{cases}$$

$$110. \begin{cases} 4x+9 < 1 \\ x+3 \leq 2x-1 \end{cases}$$

$$111. \begin{cases} 3(x-1) \geq 4x+2 \\ 3x-1 > 2x-6 \end{cases}$$

$$112. \begin{cases} 0.3x-0.8 > 0.1x+0.4 \\ 0.1x+0.2 \geq 0.2x+0.1 \end{cases}$$

$$113. \begin{cases} 3x+4 \geq 2x+5 \\ 4x+5 \leq 2x+7 \end{cases}$$

$$114. 7x-7 \leq 3x+1 < 5(x-1)$$

$$115. \begin{cases} \frac{x+1}{4} \leq x+1 \\ 3(x-1) < x-5 \end{cases}$$

$$116. \begin{cases} 2(x-2) \leq x \\ 3x-2 \geq 2(x+1) \end{cases}$$

$$117. \begin{cases} 4x-1 \geq 2x+5 \\ \frac{x+2}{12} \geq \frac{1}{4}x - \frac{1}{3} \end{cases}$$

$$118. 3(x-2) \leq 5x+4 < 2x-11$$

$$119. 4x+4 < 2x+8 \leq 3x+2$$

$$120. 12-8x \leq 4x \leq x+3$$

정답 및 해설



1) $x \leq 1$

$$\Rightarrow \begin{cases} x-2(3-x) \leq 0 & \dots \textcircled{1} \\ 2x-4(1-2x) \leq 6 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } x-6+2x \leq 0, \quad 3x \leq 6 \quad \therefore x \leq 2$$

$$\textcircled{2}\text{에서 } 2x-4+8x \leq 6, \quad 10x \leq 10 \quad \therefore x \leq 1$$

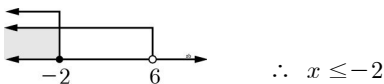
$$\therefore x \leq 1$$

2) $x \leq -2$

$$\Rightarrow \begin{cases} 3x-1 \leq 2x-3 & \dots \textcircled{1} \\ 2(x-2) < x+2 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } x \leq -2$$

$$\textcircled{2}\text{에서 } 2x-4 < x+2 \quad \therefore x < 6$$

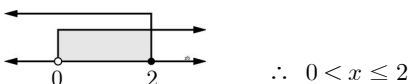


3) $0 < x \leq 2$

$$\Rightarrow \begin{cases} x+3 < 2x+3 & \dots \textcircled{1} \\ 3(x-1) \leq x+1 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } -x < 0 \quad \therefore x > 0$$

$$\textcircled{2}\text{에서 } 3x-3 \leq x+1, \quad 2x \leq 4 \quad \therefore x \leq 2$$



4) $-5 \leq x < 2$

5) $3 < x \leq 6$

6) $-3 \leq x \leq 1$

$$\Rightarrow \begin{cases} 3(x+2)-4 \leq 5 & \dots \textcircled{1} \\ x-3 \leq 3(x-2)+9 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } x \leq 1, \quad \textcircled{2}\text{에서 } x \geq -3 \text{이므로 } -3 \leq x \leq 1$$

7) $2 < x \leq 7$

8) $-3 < x \leq 2$

9) $-4 < x \leq 6$

$$\Rightarrow \begin{cases} 2(x-3) \leq x & \dots \textcircled{1} \\ 5x+2 > 3(x-2) & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{을 풀면 } x \leq 6, \quad \textcircled{2}\text{를 풀면 } 2x > -8 \Rightarrow x > -4 \text{이다.}$$

$$\text{즉, 연립부등식의 해는 } -4 < x \leq 6 \text{이다.}$$

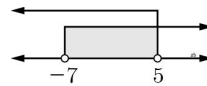
10) $-2 < x < 2$

11) $-7 < x < 5$

$$\Rightarrow \begin{cases} 4(x+1) > 3(x-1) & \dots \textcircled{1} \\ 2x-3 < x+2 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } 4x+4 > 3x-3 \quad \therefore x > -7$$

$$\textcircled{2}\text{에서 } x < 5$$



$$\therefore -7 < x < 5$$

12) $x \leq 2$

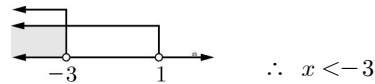
13) $-2 < x \leq 1$

14) $x < -3$

$$\Rightarrow \begin{cases} 4(x+1) < 3x+5 & \dots \textcircled{1} \\ x > 2x+3 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } 4x+4 < 3x+5 \quad \therefore x < 1$$

$$\textcircled{2}\text{에서 } -x > 3 \quad \therefore x < -3$$

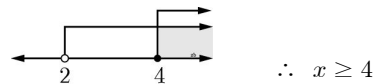


15) $x \geq 4$

$$\Rightarrow \begin{cases} x-3 > -x+1 & \dots \textcircled{1} \\ 5(x-3) \geq 3x-7 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } 2x > 4 \quad \therefore x > 2$$

$$\textcircled{2}\text{에서 } 5x-15 \geq 3x-7, \quad 2x \geq 8 \quad \therefore x \geq 4$$

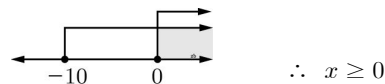


16) $x \geq 0$

$$\Rightarrow \begin{cases} x-7 \leq 2x+3 & \dots \textcircled{1} \\ 4(x+3) \geq 3(x+4) & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } -x \leq 10 \quad \therefore x \geq -10$$

$$\textcircled{2}\text{에서 } 4x+12 \geq 3x+12 \quad \therefore x \geq 0$$



17) $-3 < x < 1$

$$\Rightarrow \begin{cases} -x+5 > 2(x+1) & \dots \textcircled{1} \\ 2(x-3) < 3(x-1) & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } -x+5 > 2x+2, \quad -3x > -3 \quad \therefore x < 1$$

$$\textcircled{2}\text{에서 } 2x-6 < 3x-3 \quad \therefore -3 < x$$

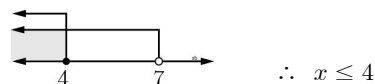


18) $x \leq 4$

$$\Rightarrow \begin{cases} 3(x-2) \leq 2(x-1) & \dots \textcircled{1} \\ 3(x-3) < x+5 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1}\text{에서 } 3x-6 \leq 2x-2 \quad \therefore x \leq 4$$

$$\textcircled{2}\text{에서 } 3x-9 < x+5, \quad 2x < 14 \quad \therefore x < 7$$



19) $x > 1$

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

$$\Rightarrow 5x > 5 \Rightarrow x > 1$$

$$6x+4 \leq 7x+5 \Rightarrow -x \leq 1 \Rightarrow x \geq -1$$

따라서 위 연립부등식의 해는 $x > 1$ 이다.

20) $x > 2$

$\Rightarrow 4x - 2 > 2 + x - (2 - 2x) \Rightarrow x > 2,$

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

따라서 연립부등식의 해는 $x > 2$ 이다.

21) $-3 < x \leq 5$

\Rightarrow 연립부등식 $\begin{cases} 3x - 4 \leq 2x + 1 \dots ① \\ 4(x - 1) + 2 < 5x + 1 \dots ② \end{cases}$

①을 풀면 $x \leq 5$, ②를 풀면 $-x < 3 \Rightarrow x > -3$

즉, 연립부등식의 해는 $-3 < x \leq 5$ 이다.

22) $x < -1$

$\Rightarrow 2(x - 1) < x - 3$ 을 풀면 $2x - 2 < x - 3$ 에서 $x < -1$,

$3x - 1 \leq 2(x + 1)$ 을 풀면 $3x - 1 \leq 2x + 2$ 에서 $x \leq 3$ 이다.

두 부등식을 동시에 만족시키는 x 의 범위는 $x < -1$ 이다.

23) $-11 < x \leq -6$

$\Rightarrow \begin{cases} \frac{x-1}{4} > \frac{x-4}{5} \dots ① \\ \frac{2}{3}x - 5 \geq \frac{3}{2}x \dots ② \end{cases}$

①에서 $5(x - 1) > 4(x - 4)$

$5x - 5 > 4x - 16 \therefore x > -11$

②에서 $4x - 30 \geq 9x, -5x \geq 30 \therefore x \leq -6$

$\therefore -11 < x \leq -6$

24) $-3 \leq x \leq -1$

$\Rightarrow \begin{cases} \frac{1}{5}x + \frac{4}{15} \geq -\frac{1}{3} \dots ① \\ \frac{1}{3}x + \frac{1}{2} \leq \frac{1}{6} \dots ② \end{cases}$

①의 양변에 15를 곱하면

$3x + 4 \geq -5, 3x \geq -9 \therefore x \geq -3$

②의 양변에 6을 곱하면

$2x + 3 \leq 1, 2x \leq -2 \therefore x \leq -1$



25) $-2 < x \leq 5$

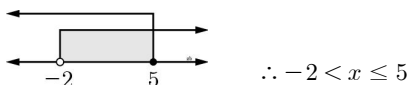
$\Rightarrow \begin{cases} \frac{3}{4}x + \frac{1}{2} > -1 \dots ① \\ x - \frac{4}{3} \leq \frac{1}{2}x + \frac{7}{6} \dots ② \end{cases}$

①의 양변에 4를 곱하면

$3x + 2 > -4, 3x > -6 \therefore x > -2$

②의 양변에 6을 곱하면

$6x - 8 \leq 3x + 7, 3x \leq 15 \therefore x \leq 5$



26) $1 < x < 6$

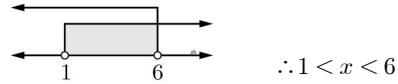
$\Rightarrow \begin{cases} \frac{x+1}{4} + \frac{x-3}{3} > -\frac{1}{6} \dots ① \\ 2x - 5 < x + 1 \dots ② \end{cases}$

①의 양변에 12를 곱하면

$3(x + 1) + 4(x - 3) > -2$

$3x + 3 + 4x - 12 > -2, 7x > 7 \therefore x > 1$

②에서 $x < 6$



27) $x \leq -7$

$\Rightarrow \begin{cases} \frac{7}{12}x + \frac{1}{6} \geq \frac{2}{3}x + \frac{3}{4} \dots ① \\ \frac{x+5}{3} - \frac{x+1}{2} \geq \frac{2}{3} \dots ② \end{cases}$

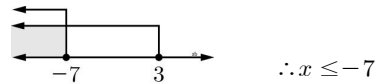
①의 양변에 12를 곱하면 $7x + 2 \geq 8x + 9$

$-x \geq 7 \therefore x \leq -7$

②의 양변에 6을 곱하면

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

$2x + 10 - 3x - 3 \geq 4, -x \geq -3 \therefore x \leq 3$



28) $24 \leq x \leq 36$

29) $-12 \leq x < 6$

30) $x \leq 1$

31) $x > 1$

32) $4 \leq x < 8$

$\Rightarrow \begin{cases} \frac{x}{2} - 3 < \frac{x}{4} - 1 \dots ① \\ \frac{2x+1}{6} \geq \frac{x+2}{4} \dots ② \end{cases}$

①의 양변에는 4를 곱하여 풀면 $x < 8$,

②의 양변에 12를 곱하여 풀면 $x \geq 4$ 이므로

$4 \leq x < 8$

33) $x \geq 4$

$\Rightarrow \begin{cases} \frac{x+1}{4} \geq \frac{x+2}{5} \dots ① \\ -x - 1 \geq \frac{-2-7x}{6} \dots ② \end{cases}$

①의 양변에 20을 곱하면 $x \geq 3$,

②의 양변에 6을 곱하면 $x \geq 4$ 이므로

$\therefore x \geq 4$

34) $\frac{6}{5} \leq x \leq \frac{16}{5}$

35) $x \leq -4$

$$\Rightarrow 1.6x + 1.2 \leq \frac{4}{5}x - 2 \text{의 양변에 } 10 \text{을 곱하면}$$

$$16x + 12 \leq 8x - 20 \Rightarrow 8x \leq -32 \Rightarrow \therefore x \leq -4$$

$$3 - \frac{x-1}{4} > \frac{2x-1}{2} \text{의 양변에 } 4 \text{를 곱하면}$$

$$12 - x + 1 > 4x - 2 \Rightarrow -5x > -15 \Rightarrow \therefore x < 3$$

즉, 연립부등식의 해는 $x \leq -4$ 이다.

36) $x < -7$

$$\Rightarrow \frac{1}{2}x + \frac{2}{3}x < x - \frac{7}{6} \text{의 양변에 } 6 \text{을 곱하면}$$

$$3x + 4x < 6x - 7 \Rightarrow \therefore x < -7$$

$$\frac{2x-1}{3} + 0.4 < 0.2(3x-1) \text{의 양변에 } 30 \text{을 곱하면}$$

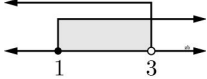
$$20x - 10 + 12 < 18x - 6 \Rightarrow 2x < -8 \Rightarrow \therefore x < -4$$

따라서 위 연립부등식의 해는 $x < -7$ 이다.

37) $1 \leq x < 3$

$$\Rightarrow \begin{cases} 4x - 5 < 7 & \dots \textcircled{1} \\ 0.3x - 0.1 \geq 0.2 & \dots \textcircled{2} \end{cases}$$

①에서 $4x < 12 \therefore x < 3$
 ②의 양변에 10을 곱하면
 $3x - 1 \geq 2, 3x \geq 3 \therefore x \geq 1$

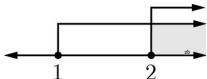


$\therefore 1 \leq x < 3$

38) $x \geq 2$

$$\Rightarrow \begin{cases} 2x - 3 \geq x - 2 & \dots \textcircled{1} \\ 0.3x + 0.6 \geq 1.2 & \dots \textcircled{2} \end{cases}$$

①에서 $x \geq 1$
 ②의 양변에 10을 곱하면
 $3x + 6 \geq 12 \therefore x \geq 2$

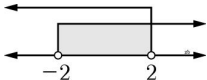


$\therefore x \geq 2$

39) $-2 < x < 2$

$$\Rightarrow \begin{cases} 4x - 1 < 5x + 1 & \dots \textcircled{1} \\ 0.2x + 0.5 > 0.4x + 0.1 & \dots \textcircled{2} \end{cases}$$

①에서 $-x < 2 \therefore x > -2$
 ②의 양변에 10을 곱하면
 $2x + 5 > 4x + 1$
 $-2x > -4 \therefore x < 2$



$\therefore -2 < x < 2$

40) $\frac{1}{4} \leq x < 5$

$$\Rightarrow \begin{cases} \frac{x+1}{3} < \frac{x+3}{4} & \dots \textcircled{1} \\ 0.6x - 0.3 \geq 0.2(x-1) & \dots \textcircled{2} \end{cases}$$

①의 양변에 12를 곱하면
 $4(x+1) < 3(x+3) \therefore x < 5$

②의 양변에 10을 곱하면

$$6x - 3 \geq 2x - 2 \therefore x \geq \frac{1}{4}$$

$$\therefore \frac{1}{4} \leq x < 5$$

41) $-2 < x \leq \frac{4}{3}$

$$\Rightarrow \begin{cases} 0.5x + 0.2 \leq 0.2(x+3) & \dots \textcircled{1} \\ \frac{3}{4}x + \frac{1}{3} > \frac{1}{12}x - 1 & \dots \textcircled{2} \end{cases}$$

①의 양변에 10을 곱하면

$$5x + 2 \leq 2x + 6 \therefore x \leq \frac{4}{3}$$

②의 양변에 12를 곱하면

$$9x + 4 > x - 12 \therefore x > -2$$

$$\therefore -2 < x \leq \frac{4}{3}$$

42) $-2 \leq x < \frac{16}{3}$

$$\Rightarrow 2x - 3 < \frac{1}{2}x + 5 \text{의 양변에 } 2 \text{를 곱하면}$$

$$4x - 6 < x + 10 \Rightarrow 3x < 16 \Rightarrow \therefore x < \frac{16}{3}$$

$$0.3x - 1 \leq \frac{3}{4}x - 0.1 \text{의 양변에 } 20 \text{을 곱하면}$$

$$6x - 20 \leq 15x - 2 \Rightarrow -9x \leq 18 \Rightarrow \therefore x \geq -2$$

즉, 위 연립부등식의 해는 $-2 \leq x < \frac{16}{3}$ 이다.

43) $3 < x < 8$

$$\Rightarrow \begin{cases} \frac{x-3}{4} < \frac{2x-6}{5} & \dots \textcircled{1} \\ 0.6x - 0.3 < \frac{x+1}{2} & \dots \textcircled{2} \end{cases}$$

①의 양변에 20을 곱하면

$$5(x-3) < 4(2x-6), 5x - 15 < 8x - 24 \therefore x > 3$$

②의 양변에 10을 곱하면

$$6x - 3 < 5x + 5 \therefore x < 8$$

$$\therefore 3 < x < 8$$

44) $-5 \leq x < 4$

$$\Rightarrow 0.2x - 1.3 \leq 0.7x + 1.2 \text{를 풀면 } -2.5 \leq 0.5x \text{에서 } -5 \leq x$$

이고, $\frac{x}{2} - \frac{x-1}{3} < 1$ 을 풀면 $3x - 2x + 2 < 6$ 에서 $x < 4$ 이

므로 부등식의 해는 $-5 \leq x < 4$ 다.

45) $1 \leq x \leq 22$

$$\Rightarrow 0.3x - 1 \leq 0.1x + 3.4 \text{의 양변에 } 10 \text{을 곱하고 풀면}$$

$$3x - 10 \leq x + 34 \Rightarrow 2x \leq 44 \Rightarrow \therefore x \leq 22$$

$$\frac{x+1}{2} - \frac{7x+5}{4} \leq -2 \text{의 양변에 } 4 \text{를 곱하고 풀면}$$

$$2x + 2 - 7x - 5 \leq -8 \Rightarrow -5x \leq -5 \Rightarrow \therefore x \geq 1$$

따라서 연립부등식의 해는 $1 \leq x \leq 22$ 이다.

$$46) -4 < x \leq -\frac{1}{8}$$

$$\Rightarrow \frac{4x+1}{2} \leq x - \frac{x-1}{3} \text{의 양변에 6을 곱하면}$$

$$12x+3 \leq 6x-2x+2 \Rightarrow 8x \leq -1 \Rightarrow \therefore x \leq -\frac{1}{8}$$

$$0.1x-3 < 1.4-(4-0.2x) \text{의 양변에 10을 곱하면}$$

$$x-30 < 14-40+2x \Rightarrow -x < 4 \Rightarrow \therefore x > -4$$

$$\text{따라서 연립부등식의 해는 } -4 < x \leq -\frac{1}{8} \text{이다.}$$

$$47) x < -\frac{7}{4}$$

$$\Rightarrow -x - \frac{x-5}{3} > 4 \text{의 양변에 3을 곱하면}$$

$$-3x-x+5 > 12 \Rightarrow -4x > 7 \Rightarrow \therefore x < -\frac{7}{4}$$

$$0.7x-1.35 < \frac{x}{5} - \frac{1}{2} \text{의 양변에 10을 곱하면}$$

$$70x-135 < 20x-50 \Rightarrow 50x < 85 \Rightarrow \therefore x < \frac{17}{10}$$

$$\text{따라서 위 연립부등식의 해는 } x < -\frac{7}{4} \text{이다.}$$

$$48) -4 < x \leq -1$$

$$\Rightarrow -2(2x-3) \geq 10 \Rightarrow 2x-3 \leq -5 \Rightarrow \therefore x \leq -1$$

$$0.3x+0.1 > 0.1x-0.7 \text{의 양변에 10을 곱하면}$$

$$3x+1 > x-7 \Rightarrow 2x > -8 \Rightarrow \therefore x > -4$$

$$\text{즉, 위 연립부등식의 해는 } -4 < x \leq -1 \text{이다.}$$

$$49) 1 \leq x < 4$$

$$\Rightarrow \begin{cases} 0.6x+0.4 \geq 0.2(x+4) & \dots \text{㉠} \\ 0.3x-0.2 > 0.5(x-2) & \dots \text{㉡} \end{cases}$$

$$\text{㉠에서 } 6x+4 \geq 2(x+4)$$

$$6x+4 \geq 2x+8, 4x \geq 4 \quad \therefore x \geq 1$$

$$\text{㉡에서 } 3x-2 > 5x-10, -2x > -8 \quad \therefore x < 4$$

$$\therefore 1 \leq x < 4$$

$$50) -3 \leq x < 1$$

$$\Rightarrow \begin{cases} 0.07x-0.02 < 0.04x+0.01 & \dots \text{㉠} \\ 0.03x-0.02 \leq 0.05x+0.04 & \dots \text{㉡} \end{cases}$$

$$\text{㉠의 양변에 100을 곱하면}$$

$$7x-2 < 4x+1, 3x < 3 \quad \therefore x < 1$$

$$\text{㉡의 양변에 100을 곱하면}$$

$$3x-2 \leq 5x+4, -2x \leq 6 \quad \therefore x \geq -3$$



$$\therefore -3 \leq x < 1$$

$$51) x \leq -4$$

$$52) -7 < x \leq -3$$

$$53) -5 \leq x \leq 2$$

$$54) -3 \leq x < 4$$

$$\Rightarrow \begin{cases} 0.3x+0.2 \geq -0.7 & \dots \text{㉠} \\ 0.2x-0.5 < 0.3 & \dots \text{㉡} \end{cases}$$

$$\text{㉠과 ㉡의 양변에 10을 곱하여 풀면}$$

$$\text{㉠에서 } x \geq -3, \text{ ㉡에서 } x < 4 \text{이므로 } -3 \leq x < 4$$

$$55) -6 < x < -4$$

$$\Rightarrow \begin{cases} 0.2x-1.8 < 0.5x & \dots \text{㉠} \\ 0.4x+2.5 < 0.9 & \dots \text{㉡} \end{cases}$$

$$\text{㉠과 ㉡의 양변에 10을 곱하면}$$

$$\text{㉠에서 } x > -6, \text{ ㉡에서 } x < -4 \text{이므로 } -6 < x < -4$$

$$56) x < -3$$

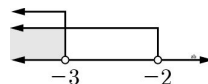
$$\Rightarrow \begin{cases} 0.6x+0.2 < 0.3x-0.7 & \dots \text{㉠} \\ 0.04x+0.13 < 0.02x+0.09 & \dots \text{㉡} \end{cases}$$

$$\text{㉠의 양변에 10을 곱하면}$$

$$6x+2 < 3x-7, 3x < -9 \quad \therefore x < -3$$

$$\text{㉡의 양변에 100을 곱하면}$$

$$4x+13 < 2x+9, 2x < -4 \quad \therefore x < -2$$



$$\therefore x < -3$$

$$57) -4 < x \leq 5$$

$$\Rightarrow \begin{cases} 0.3x-1 < 0.7x+0.6 & \dots \text{㉠} \\ 0.2x+1.05 \geq 0.5x-0.45 & \dots \text{㉡} \end{cases}$$

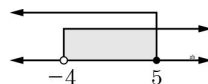
$$\text{㉠의 양변에 10을 곱하면}$$

$$3x-10 < 7x+6, -4x < 16 \quad \therefore x > -4$$

$$\text{㉡의 양변에 100을 곱하면}$$

$$20x+105 \geq 50x-45$$

$$-30x \geq -150 \quad \therefore x \leq 5$$



$$\therefore -4 < x \leq 5$$

$$58) -5 \leq x < 3$$

$$\Rightarrow \begin{cases} -1 \leq x+4 & \dots \text{㉠} \\ x+4 < 7 & \dots \text{㉡} \end{cases}$$

$$\text{㉠에서 } -x \leq 5 \quad \therefore x \geq -5$$

$$\text{㉡에서 } x < 3$$



$$\therefore -5 \leq x < 3$$

$$59) -2 < x < 4$$

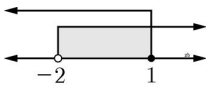
$$60) -4 \leq x < 3$$

$$61) -2 < x \leq 1$$

$$\Rightarrow \begin{cases} -7 < 3x-1 & \dots \text{㉠} \\ 3x-1 \leq 2 & \dots \text{㉡} \end{cases}$$

$$\text{㉠에서 } -3x < 6 \quad \therefore x > -2$$

$$\text{㉡에서 } 3x \leq 3 \quad \therefore x \leq 1$$



$$\therefore -2 < x \leq 1$$

$$62) -8 < x \leq 2$$

$$\Rightarrow \begin{cases} 2x-3 < 3x+5 & \dots \textcircled{1} \\ 3x+5 \leq x+9 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } -x < 8 \quad \therefore x > -8$$

$$\textcircled{2} \text{에서 } 2x \leq 4 \quad \therefore x \leq 2$$

$$\therefore -8 < x \leq 2$$

$$63) x \leq -2$$

$$64) -4 \leq x < 11$$

$$\Rightarrow \begin{cases} -2 \leq \frac{x-2}{3} & \dots \textcircled{1} \\ \frac{x-2}{3} < 3 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } -6 \leq x-2 \quad \therefore x \geq -4$$

$$\textcircled{2} \text{에서 } x-2 < 9 \quad \therefore x < 11$$

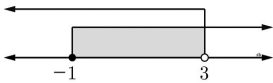
$$\therefore -4 \leq x < 11$$

$$65) 2 \leq x \leq 3$$

$$66) -1 \leq x < 3$$

$$\Rightarrow \begin{cases} 7x-4 < 4x+5 & \dots \textcircled{1} \\ 4x+5 \leq 5x+6 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } x < 3, \textcircled{2} \text{에서 } x \geq -1$$



$$\therefore -1 \leq x < 3$$

$$67) -5 \leq x < 5$$

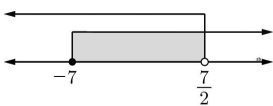
$$68) -1 < x < 5$$

$$69) 1 < x < 6$$

$$70) -7 \leq x < \frac{7}{2}$$

$$\Rightarrow \begin{cases} 5x-6 < 3x+1 & \dots \textcircled{1} \\ 3x+1 \leq \frac{7x+9}{2} & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } x < \frac{7}{2}, \textcircled{2} \text{에서 } x \geq -7$$



$$\therefore -7 \leq x < \frac{7}{2}$$

$$71) -2 < x < 1$$

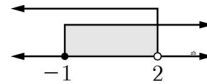
$$72) x < -3$$

$$73) -1 \leq x < 2$$

$$\Rightarrow \begin{cases} 4x-1 < x+5 & \dots \textcircled{1} \\ x+5 \leq 3x+7 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } 3x < 6 \quad \therefore x < 2$$

$$\textcircled{2} \text{에서 } -2 \leq 2x \quad \therefore -1 \leq x$$



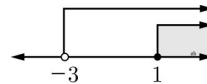
$$\therefore -1 \leq x < 2$$

$$74) x \geq 1$$

$$\Rightarrow \begin{cases} x-2 \leq 2x-3 & \dots \textcircled{1} \\ 2x-3 < 3x & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } -x \leq -1 \quad \therefore x \geq 1$$

$$\textcircled{2} \text{에서 } -3 < x$$



$$\therefore x \geq 1$$

$$75) -2 \leq x \leq 9$$

$$\Rightarrow \begin{cases} 2x-5 \leq 4x-1 & \dots \textcircled{1} \\ 4x-1 \leq 3x+8 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } -2x \leq 4 \quad \therefore x \geq -2$$

$$\textcircled{2} \text{에서 } x \leq 9$$



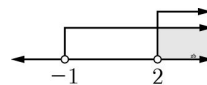
$$\therefore -2 \leq x \leq 9$$

$$76) x > 2$$

$$\Rightarrow \begin{cases} -x+1 < 2x-5 & \dots \textcircled{1} \\ 2x-5 < 4x-3 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } -3x < -6 \quad \therefore x > 2$$

$$\textcircled{2} \text{에서 } -2x < 2 \quad \therefore x > -1$$



$$\therefore x > 2$$

$$77) -5 < x \leq -1$$

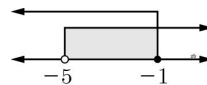
$$\Rightarrow \begin{cases} 0.3x+0.4 \leq 0.1x+0.2 & \dots \textcircled{1} \\ 0.1x+0.2 < 0.2x+0.7 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 양변에 } 10 \text{을 곱하면}$$

$$3x+4 \leq x+2, 2x \leq -2 \quad \therefore x \leq -1$$

$$\textcircled{2} \text{에서 양변에 } 10 \text{을 곱하면}$$

$$x+2 < 2x+7, -x < 5 \quad \therefore x > -5$$



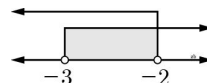
$$\therefore -5 < x \leq -1$$

$$78) -3 < x < -2$$

$$\Rightarrow \begin{cases} 1 < -2x-3 & \dots \textcircled{1} \\ -2x-3 < 3 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } 2x < -4 \quad \therefore x < -2$$

$$\textcircled{2} \text{에서 } -2x < 6 \quad \therefore x > -3$$



$$\therefore -3 < x < -2$$

$$79) -6 < x \leq -1$$

$$\Rightarrow \begin{cases} 2(x-1) < 3x+4 & \dots \textcircled{1} \\ 3x+4 \leq x+2 & \dots \textcircled{2} \end{cases}$$

$$\textcircled{1} \text{에서 } 2x-2 < 3x+4, -x < 6 \quad \therefore x > -6$$

②에서 $2x \leq -2 \quad \therefore x \leq -1$



$\therefore -6 < x \leq -1$

80) $x \geq \frac{5}{2}$

$\Rightarrow -8 + x < 4x - 5 \Rightarrow -3x < 3 \Rightarrow \therefore x > -1$

$4x - 5 \leq 2(3x - 5) \Rightarrow 4x - 5 \leq 6x - 10 \Rightarrow -2x \leq -5$

$\Rightarrow \therefore x \geq \frac{5}{2}$

따라서 위 연립부등식의 해는 $x \geq \frac{5}{2}$ 이다.

81) $-3 < x \leq 2$

\Rightarrow 연립부등식 $\begin{cases} -11 < 4x+1 \\ 4x+1 \leq 9 \end{cases}$ 을 풀면

$-11 < 4x+1 \Rightarrow -3 < x$

$4x+1 \leq 9 \Rightarrow x \leq 2$

따라서 위 연립부등식의 해는 $-3 < x \leq 2$ 이다.

82) $-1 < x \leq 3$

$\Rightarrow 5(x-1) \leq 3x+1 \Rightarrow 5x-5 \leq 3x+1 \Rightarrow \therefore x \leq 3$

$3x+1 < 4x+2 \Rightarrow -x < 1 \Rightarrow \therefore x > -1$

위 연립부등식의 해는 $-1 < x \leq 3$ 이다.

83) $-6 < x \leq 7$

$\Rightarrow 2x-3 < 3(x+1) \Rightarrow 2x-3 < 3x+3 \Rightarrow \therefore -6 < x$

$3(x+1) \leq 2x+10 \Rightarrow 3x+3 \leq 2x+10 \Rightarrow \therefore x \leq 7$

이 때, 위 연립부등식의 해는 $-6 < x \leq 7$ 이다.

84) $-1 \leq x < 4$

$\Rightarrow -2x+3 \leq x+6 \Rightarrow -3x \leq 3 \Rightarrow \therefore x \geq -1$

$x+6 < -2x+18 \Rightarrow 3x < 12 \Rightarrow \therefore x < 4$

따라서 위 연립부등식의 해는 $-1 \leq x < 4$ 이다.

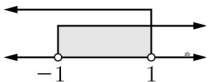
85) $-1 < x < 1$

$\Rightarrow \begin{cases} x-3 < \frac{x-5}{2} & \dots \textcircled{1} \\ \frac{x-5}{2} < 3x & \dots \textcircled{2} \end{cases}$

①의 양변에 2를 곱하면 $2x-6 < x-5 \quad \therefore x < 1$

②의 양변에 2를 곱하면

$x-5 < 6x, -5 < 5x \quad \therefore x > -1$



$\therefore -1 < x < 1$

86) $-2 < x \leq 1$

$\Rightarrow -4x+5 < 2x+17 \dots \textcircled{1}, 2x+17 \leq 12-(x-8) \dots \textcircled{2}$

①을 풀면 $-6x < 12 \Rightarrow \therefore x > -2$

②를 풀면 $3x \leq 3 \Rightarrow \therefore x \leq 1$

따라서 위 연립부등식의 해는 $-2 < x \leq 1$ 이다.

87) $-3 \leq x < \frac{5}{2}$

$\Rightarrow \begin{cases} 3x-11 \leq 2(3x-1) \dots \textcircled{1} \text{로 나타내고} \\ 2(3x-1) < 4x+3 \dots \textcircled{2} \end{cases}$

①을 풀면 $-3x \leq 9 \Rightarrow \therefore x \geq -3$,

②를 풀면 $2x < 5 \Rightarrow \therefore x < \frac{5}{2}$ 이다.

즉, 연립부등식의 해는 $-3 \leq x < \frac{5}{2}$ 이다.

88) $1 \leq x < \frac{7}{2}$

$\Rightarrow \begin{cases} \frac{5x+4}{6} \leq \frac{4x-1}{2} \dots \textcircled{1} \text{으로 나타내고 } \textcircled{1} \times 6 \text{을 풀면} \\ \frac{4x-1}{2} < x+3 \dots \textcircled{2} \end{cases}$

$5x+4 \leq 12x-3 \Rightarrow -7x \leq -7 \Rightarrow \therefore x \geq 1$ 이고, $\textcircled{2} \times 2$ 를

풀면 $4x-1 < 2x+6 \Rightarrow 2x < 7 \Rightarrow \therefore x < \frac{7}{2}$ 이다.

즉, 연립부등식의 해는 $1 \leq x < \frac{7}{2}$ 이다.

89) $1 < x \leq \frac{37}{7}$

$\Rightarrow \begin{cases} 2x-7 \leq \frac{3x+2}{5} \dots \textcircled{1} \text{로 나타내고} \\ \frac{3x+2}{5} < 4x-3 \dots \textcircled{2} \end{cases}$

① $\times 5$ 를 풀면 $10x-35 \leq 3x+2 \Rightarrow 7x \leq 37 \Rightarrow \therefore x \leq \frac{37}{7}$,

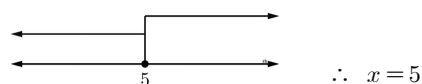
② $\times 5$ 를 풀면 $3x+2 < 20x-15 \Rightarrow -17x < -17 \Rightarrow \therefore x > 1$

즉, 연립부등식의 해는 $1 < x \leq \frac{37}{7}$ 이다.

90) $x = 5$

$\Rightarrow \begin{cases} x-2 \geq 3 & \dots \textcircled{1} \\ x+1 \leq 6 & \dots \textcircled{2} \end{cases}$

$\textcircled{1}$ 에서 $x \geq 5$, $\textcircled{2}$ 에서 $x \leq 5$



$\therefore x = 5$

91) 해가 없다.

$\Rightarrow \begin{cases} 2x-1 \geq 5 \dots \textcircled{1} \text{에서 } \textcircled{1} \text{을 풀면 } x \geq 3 \text{이고,} \\ -x < -2x+3 \dots \textcircled{2} \end{cases}$

②를 풀면 $x < 3$ 이다. 즉, 연립부등식의 해는 없다.

92) 해가 없다.

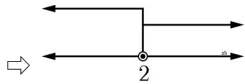
$\Rightarrow \begin{cases} 3x-6 < x & \dots \textcircled{1} \text{에서} \\ 2x+1 \leq 3x-4 & \dots \textcircled{2} \end{cases}$

$\textcircled{1}$ 을 풀면 $x < 3$, $\textcircled{2}$ 을 풀면 $5 \leq x$

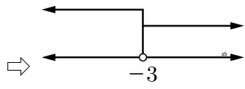
따라서 위 연립부등식의 해는 없다.

93) $x = 3$

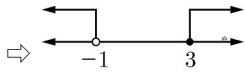
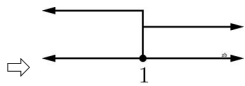
94) 해가 없다.



95) 해가 없다.



96) 해가 없다.

97) $x = 1$ 

98) 해가 없다.

$$\Rightarrow \begin{cases} 2x+7 \leq 3 \cdots \textcircled{1} \\ 3x-2 \geq 4 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $2x \leq -4 \therefore x \leq -2$
 $\textcircled{2}$ 에서 $3x \geq 6 \therefore x \geq 2$

\therefore 해가 없다.

99) 해가 없다.

$$\Rightarrow \begin{cases} 2x+1 \leq 3x-2 \cdots \textcircled{1} \\ x-4 \geq 2x-3 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $-x \leq -3 \therefore x \geq 3$
 $\textcircled{2}$ 에서 $-x \geq 1 \therefore x \leq -1$

\therefore 해가 없다.

100) 해가 없다.

$$\Rightarrow \begin{cases} 5x-2 < 3x+2 \cdots \textcircled{1} \\ 2x-1 > -x+5 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $2x < 4 \therefore x < 2$
 $\textcircled{2}$ 에서 $3x > 6 \therefore x > 2$

\therefore 해가 없다.

101) 해가 없다.

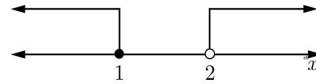
102) 해가 없다.

103) 해가 없다.

104) 해가 없다.

$$\Rightarrow \begin{cases} -3(x-2) < 2x-4 \cdots \textcircled{1} \\ 6-3x \geq x+2 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $-3x+6 < 2x-4, -5x < -10 \therefore x > 2$
 $\textcircled{2}$ 에서 $-4x \geq -4 \therefore x \leq 1$

 \therefore 해가 없다.

105) 해가 없다.

$$\Rightarrow \begin{cases} 4-3x > -8 \cdots \textcircled{1} \\ -3x-1 < -13 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $-3x > -12 \therefore x < 4$
 $\textcircled{2}$ 에서 $-3x < -12 \therefore x > 4$

\therefore 해가 없다.

106) 해가 없다.

107) $x = 2$

$$\Rightarrow \begin{cases} 5x-3 \leq 7 \cdots \textcircled{1} \\ -4x \leq -8 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $x \leq 2, \textcircled{2}$ 에서 $x \geq 2$

$\therefore x = 2$

108) $x = -2$

$$\Rightarrow \begin{cases} x-3 \leq 2x-1 \cdots \textcircled{1} \\ 3x+5 \leq x+1 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $-x \leq 2 \therefore x \geq -2$
 $\textcircled{2}$ 에서 $2x \leq -4 \therefore x \leq -2$

$\therefore x = -2$

109) $x = 6$

110) 해가 없다.

111) 해가 없다.

$$\Rightarrow \begin{cases} 3(x-1) \geq 4x+2 \cdots \textcircled{1} \\ 3x-1 > 2x-6 \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $3x-3 \geq 4x+2, -x \geq 5 \therefore x \leq -5$
 $\textcircled{2}$ 에서 $x > -5$

\therefore 해가 없다.

112) 해가 없다.

$$\Rightarrow \begin{cases} 0.3x-0.8 > 0.1x+0.4 \cdots \textcircled{1} \\ 0.1x+0.2 \geq 0.2x+0.1 \cdots \textcircled{2} \end{cases}$$

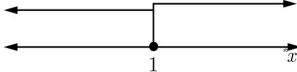
$\textcircled{1}$ 의 양변에 10을 곱하면
 $3x-8 > x+4, 2x > 12 \therefore x > 6$
 $\textcircled{2}$ 의 양변에 10을 곱하면
 $x+2 \geq 2x+1, -x \geq -1 \therefore x \leq 1$

\therefore 해가 없다.

113) $x = 1$

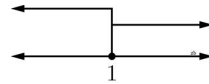
$$\Rightarrow \begin{cases} 3x+4 \geq 2x+5 & \cdots \textcircled{1} \\ 4x+5 \leq 2x+7 & \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $x \geq 1$, $\textcircled{2}$ 에서 $2x \leq 2 \quad \therefore x \leq 1$



$\therefore x = 1$

$\textcircled{2}$ 에서 $3x \leq 3 \quad \therefore x \leq 1$



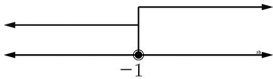
$\therefore x = 1$

114) 해가 없다.

115) 해가 없다.

$$\Rightarrow \begin{cases} \frac{x+1}{4} \leq x+1 & \cdots \cdots \textcircled{1} \\ 3(x-1) < x-5 & \cdots \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $x \geq -1$, $\textcircled{2}$ 에서 $x < -1$

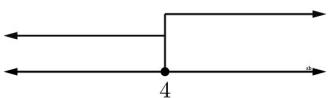


\therefore 해가 없다.

116) $x=4$

$$\Rightarrow \begin{cases} 2(x-2) \leq x & \cdots \cdots \textcircled{1} \\ 3x-2 \geq 2(x+1) & \cdots \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $x \geq 4$, $\textcircled{2}$ 에서 $x \leq 4$



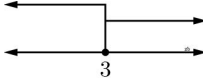
$\therefore x = 4$

117) $x=3$

$$\Rightarrow \begin{cases} 4x-1 \geq 2x+5 & \cdots \textcircled{1} \\ \frac{x+2}{12} \geq \frac{1}{4}x - \frac{1}{3} & \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $2x \geq 6 \quad \therefore x \geq 3$

$\textcircled{2}$ 의 양변에 12를 곱하면

$$x+2 \geq 3x-4, \quad -2x \geq -6 \quad \therefore x \leq 3$$


$\therefore x = 3$

118) 해가 없다.

$$\Rightarrow 3(x-2) \leq 5x+4 \Rightarrow 3x-6 \leq 5x+4 \Rightarrow -2x \leq 10$$

$$\Rightarrow \therefore x \geq -5$$

$$5x+4 < 2x-11 \Rightarrow 3x < -15 \quad \therefore x < -5$$

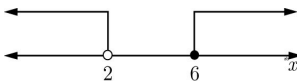
따라서 위 연립부등식의 해는 없다.

119) 해가 없다.

$$\Rightarrow \begin{cases} 4x+4 < 2x+8 & \cdots \textcircled{1} \\ 2x+8 \leq 3x+2 & \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $2x < 4 \quad \therefore x < 2$

$\textcircled{2}$ 에서 $-x \leq -6 \quad \therefore x \geq 6$



\therefore 해가 없다.

120) $x=1$

$$\Rightarrow \begin{cases} 12-8x \leq 4x & \cdots \textcircled{1} \\ 4x \leq x+3 & \cdots \textcircled{2} \end{cases}$$

$\textcircled{1}$ 에서 $-12x \leq -12 \quad \therefore x \geq 1$