

Ex 1

$$\begin{aligned} \textcircled{1} \quad 3x+4 &> 7 \\ 3x &> 3 \\ x &> 1 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 7x-2 &< 19 \\ 7x &< 21 \\ x &< 3 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad 3 &> 4x+11 \\ -4x &> 11-3 \\ -4x &> 8 \\ x &< \frac{8}{-4} \\ x &< -2 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 26 &< 8-9x \\ 9x &< 8-26 \\ 9x &< -18 \\ x &< \frac{-18}{9} \\ x &< -2 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad 6x-7+2x-9 &\geq 0 \\ 8x &\geq 16 \\ x &\geq 2 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad 9x-17+6x-8 &\leq 20 \\ 15x &\leq 20+27 \\ 15x &\leq 47 \\ x &\leq \frac{47}{15} \\ x &\leq 3 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad 5x-30 &< x-4 \\ 4x &< 26 \\ x &< \frac{26}{4} \\ x &< \frac{13}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad 17-3x &\geq 9x+45 \\ -9x-3x &\geq 45-17 \\ -12x &\geq 28 \\ x &\leq \frac{28}{-12} \\ x &\leq -\frac{7}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad 4+5x &< 8-11x \\ 11x+5x &< 8-4 \\ 16x &< 4 \\ x &< \frac{4}{16} \\ x &< \frac{1}{4} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad 7x-5+4x &\geq 20-6x+26 \\ 7x+4x+6x &\geq 20+26+5 \\ 17x &\geq 51 \\ x &\geq \frac{51}{17} \\ x &\geq 3 \end{aligned}$$

$$\textcircled{11} \quad 2(3x-7)+3 > 13-2x$$

$$6x-14+3 > 13-2x$$

$$6x+2x > 13+14-3$$

$$8x > 24$$

$$x > \frac{24}{8}$$

$$x > 3$$

$$\textcircled{12} \quad 3(2x-7)+4(3-2x) > 3(2x-7) > 5(6-x)+4$$

$$6x-21 > 30-5x+4$$

$$6x+5x > 34+21$$

$$11x > 55$$

$$x > \frac{55}{11}$$

$$x > 5$$

$$\textcircled{13} \quad 2(x-7)+4(3-2x) \leq -26$$

$$2x-14+12-8x \leq -26$$

$$-6x \leq -26+14-12$$

$$-6x \leq -24$$

$$x \geq \frac{-24}{-6}$$

$$x \geq 4$$

$$\textcircled{14} \quad 3(x-7)+2(2x-9) < 2(12-x)$$

$$3x-21+4x-18 < 24-2x$$

$$3x+4x+2x < 24+21+18$$

$$9x < 63$$

$$x < \frac{63}{9}$$

$$x < 7$$

$$\textcircled{15} \quad 8(2x-4)-9x \leq 3$$

$$16x-32-9x \leq 3$$

$$7x \leq 35$$

$$x \leq 5$$

$$\begin{aligned}
 (16) \quad & 2(3x-7) + 3(x+1) \geq 3(10-x) + 1 \\
 & 6x - 14 + 3x + 3 \geq 30 - 3x + 1 \\
 & 9x - 11 \geq 31 - 3x \\
 & 9x + 3x \geq 31 + 11 \\
 & 12x \geq 42 \\
 & x \geq \frac{42}{12} \\
 & x \geq \frac{7}{2}
 \end{aligned}$$

$$\begin{aligned}
 (17) \quad & -7 - 4(x-3) > 23 + 2x \\
 & -7 - 4x + 12 > 23 + 2x \\
 & -4x - 2x > 23 + 7 - 12 \\
 & -6x > 18 \\
 & x < \frac{18}{-6} \\
 & x < -3
 \end{aligned}$$

$$\begin{aligned}
 (18) \quad & 5(2x+7) + 20 \leq 3(x+9) - 1 \\
 & 10x + 35 + 20 \leq 3x + 27 - 1 \\
 & 10x - 3x \leq 26 - 55 \\
 & 7x \leq -29 \\
 & x \leq \frac{-29}{7}
 \end{aligned}$$

$$\begin{aligned}
 (19) \quad & 3(5x+7) + 2(x-9) < 10(6-x) + 3(1-3x) \\
 & 15x + 21 + 2x - 18 < 60 - 10x + 3 - 9x \\
 & 17x + 3 < 63 - 19x \\
 & 17x + 19x < 63 - 3 \\
 & 36x < 60 \\
 & x < \frac{60}{36} \\
 & x < \frac{5}{3}
 \end{aligned}$$

$$\begin{aligned}
 (20) \quad & -15 + 7(2x+3) \geq 6x + 8(2-x) \\
 & -15 + 14x + 21 \geq 6x + 16 - 8x \\
 & 14x + 6 \geq 16 - 2x \\
 & 16x \geq 10 \\
 & x \geq \frac{10}{16} \\
 & x \geq \frac{5}{8}
 \end{aligned}$$