19500 section 1.8

$S = \{-5, -1, 0, \frac{2}{3}, \frac{5}{6}, 1, \sqrt{5}, 3, 5\}$

8) $1 - 2x \geq 5x$
$\quad +2x \quad +2x$
$1 \geq 7x$

$x = -5$: $1 \geq 7(-5)$, $1 \geq -35$

$x = -1$: $1 \geq 7(-1)$, $1 \geq -7$

$x = 0$: $1 \geq 7(0)$, $1 \geq 0$

$x = \frac{2}{3}$: $1 \geq 7(\frac{2}{3})$, $1 \not\geq \frac{14}{3}$ no

since the remaining values of S are greater than $\frac{2}{3}$, only $\{-5, -1, 0\}$ satisfy the inequality.

10) $-2 \leq 3 - x < 2$
$\quad -3 \quad -3 \quad -3$
$-5 \leq -x < -1$

$x = -5$: $-5 \leq -(-5) < -1$, $-5 \leq 5 \not< -1$, no

$x = -1$: $-5 \leq -(-1) < -1$, $-5 \leq 1 \not< -1$, no

$x = 0$: $-5 \leq -(0) < -1$, $-5 \leq 0 \not< -1$, no

$x = \frac{2}{3}$: $-5 \leq -(\frac{2}{3}) < -1$, $-5 \leq -\frac{2}{3} \not< -1$, no

$x = \frac{5}{6}$: $-5 \leq -(\frac{5}{6}) < -1$, $-5 \leq -\frac{5}{6} \not< -1$, no

$x = 1$: $-5 \leq -(1) < -1$, $-5 \leq -1 \not< -1$, no

$x = \sqrt{5}$: $-5 \leq -(\sqrt{5}) < -1$, $-5 \leq -\sqrt{5} < -1$ ✓

$x = 3$: $-5 \leq -(3) < -1$, $-5 \leq -3 < -1$ ✓

$x = 5$: $-5 \leq -(5) < -1$, $-5 \leq -5 < -1$ ✓

only $\{\sqrt{5}, 3, 5\}$ satisfy the inequality

19500 section 1.8

12) $x^2+2<4$

$\quad -2 \quad -2$

$x^2<2$

$S=\{-5,-1,0,\frac{2}{3},\frac{5}{6},1,\sqrt{5},3,5\}$

$x=-5$: $(-5)^2<2$

$25 \not< 2$

no

since we have x^2 when $x=5$ also will not satisfy.

$x=3$: $(3)^2<2$, $9 \not< 2$, no

$x=\sqrt{5}$: $(\sqrt{5})^2<2$, $5 \not< 2$, no

$x=-1$: $(-1)^2<2$, $1<2$

$x=1$ will also satisfy. This will also satisfy when $x=0$, $x=\frac{2}{3}$, and $x=\frac{5}{6}$ because they are between $-1<x<1$.

only $\{-1,0,\frac{2}{3},\frac{5}{6},1\}$ will satisfy the inequality.

14) $-4x \geq 10$

$-10+4x \quad -10+4x$

$\frac{-10}{4} \geq \frac{4x}{4}$

$\frac{-5}{2} \geq x$

$x \leq \frac{-5}{2}$

$(-\infty, \frac{-5}{2}]$

$\frac{-5}{2}$

16) $3x+11<5$

$-11 \quad -11$

$\frac{3x}{3} < \frac{-6}{3}$

$x<-2$

$(-\infty,-2)$

-2

18) $5-3x \leq -16$

$+16+3x \quad +16+3x$

$\frac{21}{3} \leq \frac{3x}{3}$

$7 \leq x$

$[7,\infty)$

7

20) $0<5-2x$

$+2x \quad +2x$

$\frac{2x}{2} < \frac{5}{2}$

$x<\frac{5}{2}$

$(-\infty,\frac{5}{2})$

$\frac{5}{2}$

22) $5-3x \geq 8x-7$

$+7+3x \quad +3x+7$

$\frac{12}{11} \geq \frac{11x}{11}$

$\frac{12}{11} \geq x$

$x \leq \frac{12}{11}$

$(-\infty,\frac{12}{11}]$

$\frac{12}{11}$

19500 section 1.8

24) $\frac{2}{5}x + 1 < \frac{1}{5} - 2x$ LCD=5

$5\left(\frac{2}{5}x+1\right) < \left(\frac{1}{5}-2x\right)5$

$2x + 5 < 1 - 10x$

$+10x \quad -5 \quad -5 \quad +10x$

$\frac{12x}{12} < \frac{-4}{12}$

$x < \frac{-1}{3}$

$(-\infty, \frac{-1}{3})$

26) $\frac{2}{3} - \frac{1}{2}x \geq \frac{1}{6} + x$ LCD=6

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

$4 - 3x \geq 1 + 6x$

$-1 \quad +3x \quad -1 \quad +3x$

$\frac{3}{9} \geq \frac{9x}{9}$

$\frac{1}{3} \geq x$

$x \leq \frac{1}{3}$

$(-\infty, \frac{1}{3}]$

28) $2(7x-3) \leq 12x+16$

$14x - 6 \leq 12x + 16$

$-12x + 6 \quad -12x \quad +6$

$\frac{2x}{2} \leq \frac{22}{2}$

$x \leq 11$

$(-\infty, 11]$

30) $5 \leq 3x - 4 \leq 14$

$+4 \quad +4 \quad +4$

$\frac{9}{3} \leq \frac{3x}{3} \leq \frac{18}{3}$

$3 \leq x \leq 6$

$[3, 6]$

19500 section 1.8

32) $1 < 3x + 4 \le 16$

$$\begin{array}{ccccc} -4 & & -4 & & -4 \\ \hline -3 & < & 3x & \le & 12 \\ \hline 3 & & 3 & & 3 \end{array}$$

$-1 < x \le 4$

$(-1, 4]$

34) $-3 \le 3x + 7 \le \frac{1}{2}$ LCD=2

$2(-3) \le 2(3x+7) \le (\frac{1}{2})2$

$-6 \le 6x + 14 \le 1$

$$\begin{array}{ccccc} -14 & & -14 & & -14 \\ \hline -20 & \le & 6x & \le & -13 \\ \hline 6 & & 6 & & 6 \end{array}$$

$\frac{-10}{3} \le x \le \frac{-13}{6}$

$\left[\frac{-10}{3}, \frac{-13}{6}\right]$

36) $\frac{-1}{2} \le \frac{4-3x}{5} \le \frac{1}{4}$ LCD=20

$20\left(\frac{-1}{2}\right) \le 20\left(\frac{4-3x}{5}\right) \le \left(\frac{1}{4}\right)20$

$-10 \le 4(4-3x) \le 5$

$-10 \le 16 - 12x \le 5$

$$\begin{array}{ccccc} -16 & & -16 & & -16 \\ \hline -26 & \le & -12x & \le & -11 \\ \hline -12 & & -12 & & -12 \end{array}$$

$\frac{13}{6} \ge x \ge \frac{11}{12}$

$\frac{11}{2} \le x \le \frac{13}{6}$

$\left[\frac{11}{2}, \frac{13}{6}\right]$

38) $(x-5)(x+4) \ge 0$

$x + 4 = 0$ $\quad$ $x - 5 = 0$

$x = \boxed{-4}$ $\quad$ $x = \boxed{5}$

	$(-\infty, -4)$	$(-4, 5)$	$(5, \infty)$
$(x+4)$	neg	POS	POS
$(x-5)$	neg	neg	POS
$(x-5)(x+4)$	POS	neg	POS

$(-\infty, -4] \cup [5, \infty)$

19500 section 1.8

40) $x(2-3x) \le 0$

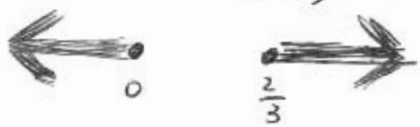
$x = \boxed{0}$ $\quad 2-3x=0$

$2 = 3x$

$\boxed{\frac{2}{3}} = x$

	$(-\infty, 0)$	$(0, \frac{2}{3})$	$(\frac{2}{3}, \infty)$
x	neg	POS	POS
$(2-3x)$	POS	POS	neg
$x(2x-3x)$	neg	POS	neg

$(-\infty, 0] \cup [\frac{2}{3}, \infty)$



42) $x^2+5x+6 > 0$

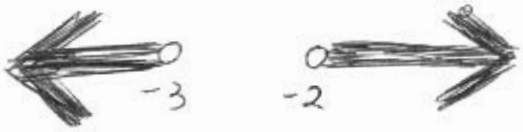
$(x+3)(x+2) > 0$

$x+3=0$ $\quad x+2=0$

$x=-3$ $\quad x=-2$

	$(-\infty, -3)$	$(-3, -2)$	$(2, \infty)$
$(x+3)$	neg	POS	POS
$(x+2)$	neg	neg	POS
$(x+3)(x+2)$	POS	neg	POS

$(-\infty, -3) \cup (-2, \infty)$



44) $x^2 < x+2$

$x^2 - x - 2 < 0$

$(x+1)(x-2) < 0$

$x+1=0$ $\quad x-2=0$

$x=-1$ $\quad x=2$

	$(-\infty, -1)$	$(-1, 2)$	$(2, \infty)$
$(x+1)$	neg	POS	POS
$(x-2)$	neg	neg	POS
$(x+1)(x-2)$	POS	neg	POS

$(-1, 2)$

46) $5x^2+3x \ge 3x^2+2$

$2x^2+3x-2 \ge 0$

$(x+2)(2x-1) \ge 0$

$x+2=0$ $\quad 2x-1=0$

$x = \boxed{-2}$ $\quad 2x=1$

$x = \boxed{\frac{1}{2}}$

	$(-\infty, -2)$	$(-2, \frac{1}{2})$	$(\frac{1}{2}, \infty)$
$(x+2)$	neg	POS	POS
$(2x+1)$	neg	neg	POS
$(x+2)(2x+1)$	POS	neg	POS

$(-\infty, -2] \cup [\frac{1}{2}, \infty)$

19500 section 1.8

48) $x^2+2x > 3$

$x^2+2x-3>0$

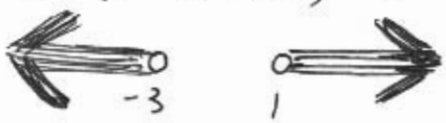
$(x+3)(x-1)>0$

$x+3=0 \qquad x-1=0$

$x=-3 \qquad x=1$

	$(-\infty,-3)$	$(-3,1)$	$(1,\infty)$
$(x+3)$	neg	POS	POS
$(x-1)$	neg	neg	POS
$(x+3)(x-1)$	POS	neg	POS

$(-\infty,-3)\cup(1,\infty)$



50) $x^2 \geq 9$

$x^2-9\geq 0$

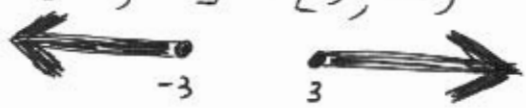
$(x+3)(x-3)\geq 0$

$x+3=0 \qquad x-3=0$

$x=\boxed{-3} \qquad x=\boxed{3}$

	$(-\infty,-3)$	$(-3,3)$	$(3,\infty)$
$(x+3)$	neg	POS	POS
$(x-3)$	neg	neg	POS
$(x+3)(x-3)$	POS	neg	POS

$(-\infty,-3]\cup[3,\infty)$



52) $(x-5)(x-2)(x+1)>0$

$x+1=0 \qquad x-2=0 \qquad x-5=0$

$x=-1 \qquad x=2 \qquad x=5$

	$(-\infty,-1)$	$(-1,2)$	$(2,5)$	$(5,\infty)$
$(x+1)$	neg	POS	POS	POS
$(x-2)$	neg	neg	POS	POS
$(x-5)$	neg	neg	neg	POS
$(x+1)(x-2)(x-5)$	neg	POS	neg	POS

$(-1,2)\cup(5,\infty)$

54) $(x+3)^2(x+1)>0$

$x+3=0 \qquad x+1=0$

$x=-3 \qquad x=-1$

	$(-\infty,-3)$	$(-3,-1)$	$(-1,\infty)$
$(x+3)$	neg	POS	POS
$(x+3)^2$	POS	POS	POS
$(x+1)$	neg	neg	POS
$(x+3)^2(x+1)$	neg	neg	POS

$(-1,\infty)$

19500 section 1.8

56) $4x^2(x^2-9) \le 0$

$4x^2(x+3)(x-3) \le 0$

$x+3=0 \quad 4x^2=0 \quad x-3=0$

$x=\boxed{-3} \quad x=\boxed{0} \quad x=\boxed{3}$

	$(-\infty,-3)$	$(-3,0)$	$(0,3)$	$(3,\infty)$
x	neg	neg	POS	POS
x^2	POS	POS	POS	POS
$(x+3)$	neg	POS	POS	POS
$(x-3)$	neg	neg	neg	POS
$4x^2(x+3)(x-3)$	POS	neg		POS

$[-3, 3]$

58) $16x \le x^3$

$0 \le x^3 - 16x$

$0 \le x(x^2-16)$

$0 \le x(x+4)(x-4)$

$x+4=0 \quad x=\boxed{0} \quad x-4=0$

$x=\boxed{-4} \quad x=\boxed{4}$

	$(-\infty,-4)$	$(-4,0)$	$(0,4)$	$(4,\infty)$
$(x+4)$	neg	POS	POS	POS
x	neg	neg	POS	POS
$(x-4)$	neg	neg	neg	POS
$x(x+4)(x-4)$	neg	POS	neg	POS

$[-4, 0] \cup [4, \infty)$

60) $\dfrac{2x+6}{x-2} < 0$

$2x+6=0 \quad x-2=0$

$2x=-6 \quad x=2$

$x=-3$

	$(-\infty,-3)$	$(-3,2)$	$(2,\infty)$
$(2x+6)$	neg	POS	POS
$(x-2)$	neg	neg	POS
$\dfrac{(2x+6)}{(x-2)}$	POS	neg	POS

$(-3, 2)$

62) $\dfrac{x-4}{2x+1} < 5$

$\dfrac{x-4}{2x+1} - 5 < 0$

$\dfrac{x-4}{2x+1} - 5\left(\dfrac{2x+1}{2x+1}\right) < 0$

$\dfrac{x-4-5(2x+1)}{2x+1} < 0$

$\dfrac{x-4-10x-5}{2x+1} < 0$

$\dfrac{-9x-1}{2x+1} < 0$

$-\dfrac{(9x+1)}{(2x+1)} < 0$

$0 < \dfrac{(9x+1)}{(2x+1)}$

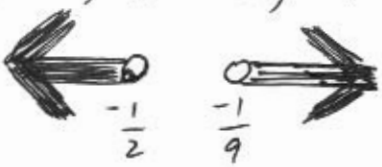
$2x+1=0 \quad 9x+1=0$

$2x=-1 \quad 9x=-1$

$x=\frac{-1}{2} \quad x=\frac{-1}{9}$

	$(-\infty,\frac{-1}{2})$	$(\frac{-1}{2},\frac{-1}{9})$	$(\frac{-1}{9},\infty)$
$(2x+1)$	neg	POS	POS
$(9x+1)$	neg	neg	POS
$\dfrac{(9x+1)}{(2x+1)}$	POS	neg	POS

$(-\infty, \frac{-1}{2}) \cup (\frac{-1}{9}, \infty)$



19500 section 1.8

64) $\frac{3+x}{3-x} \geq 1$

$$\frac{3+x}{3-x} - 1 \geq 0$$

$$\frac{3+x}{3-x} - 1\left(\frac{3-x}{3-x}\right) \geq 0$$

$$\frac{3+x-1(3-x)}{3-x} \geq 0$$

$$\frac{3+x-3+x}{3-x} \geq 0$$

$$\frac{2x}{3-x} \geq 0$$

$2x = 0 \qquad 3 - x = 0$

$x = \boxed{0} \qquad 3 = x$

	$(-\infty, 0)$	$\boxed{0}$ $(0, 3)$	3 $(3, \infty)$
x	neg	POS	POS
$(3-x)$	POS	POS	neg
$\frac{2x}{3-x}$	neg	POS	neg

$[0, 3)$

66) $\frac{x}{x+1} > 3x$

$$\frac{x}{x+1} - 3x > 0$$

$$\frac{x}{x+1} - 3x\left(\frac{x+1}{x+1}\right) > 0$$

$$\frac{x - 3x(x+1)}{x+1} > 0$$

$$\frac{x - 3x^2 - 3x}{x+1} > 0$$

$$\frac{-3x^2 - 2x}{x+1} > 0$$

$$\frac{-(3x^2+2x)}{x+1} > 0$$

$$0 > \frac{3x^2+2x}{x+1}$$

$$0 > \frac{x(3x+2)}{x+1}$$

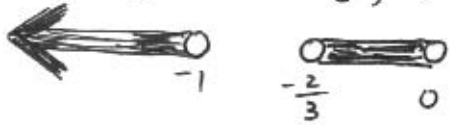
$x + 1 = 0 \qquad 3x + 2 = 0 \qquad x = 0$

$x = -1 \qquad 3x = -2$

$x = \frac{-2}{3}$

	$(-\infty, -1)$	-1 $(-1, \frac{-2}{3})$	$\frac{-2}{3}$ $(\frac{-2}{3}, 0)$	0 $(0, \infty)$
$(x+1)$	neg	POS	POS	POS
$(3x+2)$	neg	neg	POS	POS
x	neg	neg	neg	POS
$\frac{x(3x+2)}{(x+1)}$	neg	POS	neg	POS

$(-\infty, -1) \cup (\frac{-2}{3}, 0)$



19500 section 1.8

68) $\frac{3}{x-1} - \frac{4}{x} \geq 1$

$\frac{3}{(x-1)} - \frac{4}{x} - 1 \geq 0$ LCD $= x(x-1)$

$\frac{3}{(x-1)}\left(\frac{x}{x}\right) - \frac{4}{x}\left(\frac{(x-1)}{(x-1)}\right) - 1\left(\frac{x(x-1)}{x(x-1)}\right) \geq 0$

$\frac{3x - 4(x-1) - x(x-1)}{x(x-1)} \geq 0$

$\frac{3x - 4x + 4 - x^2 + x}{x(x-1)} \geq 0$

$\frac{-x^2 + 4}{x(x-1)} \geq 0$

$\frac{4 - x^2}{x(x-1)} \geq 0$ $\quad 2 + x = 0$, $x = \boxed{-2}$ $\quad x = 0$

$\frac{(2+x)(2-x)}{x(x-1)} \geq 0$ $\quad x - 1 = 0$, $x = 1$ $\quad 2 - x = 0$, $\boxed{2} = x$

$\boxed{-2}$ $\quad 0 \quad 1 \quad \boxed{2}$

	$(-\infty,-2)$	$(-2,0)$	$(0,1)$	$(1,2)$	$(2,\infty)$
$(2+x)$	neg	POS	POS	POS	POS
x	neg	neg	POS	POS	POS
$(x-1)$	neg	neg	neg	POS	POS
$(2-x)$	POS	POS	POS	POS	neg
$\frac{(2+x)(2-x)}{x(x-1)}$	neg	POS	neg	POS	neg

$[-2, 0) \cup (1, 2]$

70) $\frac{x}{2} \geq \frac{5}{x+1} + 4$

$0 \geq \frac{5}{(x+1)} + 4 - \frac{x}{2}$ LCD $= 2(x+1)$

$0 \geq \frac{5}{(x+1)}\left(\frac{2}{2}\right) + 4\left(\frac{2(x+1)}{2(x+1)}\right) - \frac{x}{2}\left(\frac{(x+1)}{(x+1)}\right)$

$0 \geq \frac{5(2) + 8(x+1) - x(x+1)}{2(x+1)}$

$0 \geq \frac{10 + 8x + 8 - x^2 - x}{2(x+1)}$

$0 \geq \frac{-x^2 + 7x + 18}{2(x+1)}$

$0 \geq \frac{-(x^2 - 7x - 18)}{2(x+1)}$

$\frac{x^2 - 7x - 18}{2(x+1)} \geq 0$ $\quad x + 2 = 0$, $x = \boxed{-2}$ $\quad x + 1 = 0$, $x = -1$

$\frac{(x+2)(x-9)}{2(x+1)} \geq 0$ $\quad x - 9 = 0$, $x = \boxed{9}$

$\boxed{-2} \quad -1 \quad \boxed{9}$

	$(-\infty,-2)$	$(-2,-1)$	$(-1,9)$	$(9,\infty)$
$(x+2)$	neg	POS	POS	POS
$(x+1)$	neg	neg	POS	POS
$(x-9)$	neg	neg	neg	POS
$\frac{(x+2)(x-9)}{2(x+1)}$	neg	POS	neg	POS

$[-2, -1) \cup [9, \infty)$

19500 section 1.8

72) $\frac{1}{x+1} + \frac{1}{x+2} \le 0$ LCD $= (x+2)(x+1)$

$x+2=0$
$x=-2$

$x+1=0$
$x=-1$

$2x+3=0$
$2x=-3$
$x=\boxed{\frac{-3}{2}}$

$$\frac{1}{(x+1)}\left(\frac{(x+2)}{(x+2)}\right) + \frac{1}{(x+2)}\left(\frac{(x+1)}{(x+1)}\right) \le 0$$

$$\frac{(x+2)+(x+1)}{(x+2)(x+1)} \le 0$$

$$\frac{x+2+x+1}{(x+2)(x+1)} \le 0$$

$$\frac{2x+3}{(x+2)(x+1)} \le 0$$

	$(-\infty,-2)$	$(-2,-\frac{3}{2})$	$(-\frac{3}{2},-1)$	$(-1,\infty)$
$(x+2)$	neg	POS	POS	POS
$(2x+3)$	neg	neg	POS	POS
$(x+1)$	neg	neg	neg	POS
$\frac{(2x+3)}{(x+2)(x+1)}$	neg	POS	neg	POS

$(-\infty,-2) \cup \left[\frac{-3}{2},-1\right)$

---

74) $x^5 > x^2$

note: $A^3 - B^3 = (A-B)(A^2+AB+B^2)$

$(x^2+x+1) > 0$ for all real number $(-\infty,\infty)$

$x^5 - x^2 > 0$

$x^2(x^3-1) > 0$

$x^2(x-1)(x^2+x+1) > 0$

$x^2=0$
$x=0$

$x-1=0$
$x=1$

	$(-\infty,0)$	$(0,1)$	$(1,\infty)$
x	neg	POS	POS
x^2	POS	POS	POS
$(x-1)$	neg	neg	POS
$x^2(x-1)(x^2+x+1)$	neg	neg	POS

$(1,\infty)$

19500 section 1.8

76) $|16x| \le 8$

$\frac{-8}{16} \le \frac{16x}{16} \le \frac{8}{16}$

$-\frac{1}{2} \le x \le \frac{1}{2}$

$[-\frac{1}{2}, \frac{1}{2}]$

78) $\frac{1}{2}|x| \ge 1$

$|x| \ge 2$

$-(x) \ge 2$

$-x \ge 2$

$-2 \quad +x \quad -2 \quad +x$

$-2 \ge x$

$x \le -2$

$+(x) \ge 2$

$x \ge 2$

$2 \le x$

$(-\infty, -2] \cup [2, \infty)$

80) $|x+1| \ge 1$

$-(x+1) \ge 1$

$-x-1 \ge 1$

$+x \quad -1 \quad -1 \quad +x$

$-2 \ge x$

$x \le -2$

$+(x+1) \ge 1$

$x+1 \ge 1$

$-1 \quad -1$

$x \ge 0$

$0 \le x$

$(-\infty, -2] \cup [0, \infty)$

82) $|5x-2| < 8$

$-8 < 5x-2 < 8$

$+2 \quad +2 \quad +2$

$\frac{-6}{5} < \frac{5x}{5} < \frac{10}{5}$

$\frac{-6}{5} < x < 2$

$(\frac{-6}{5}, 2)$

84) $|8x+3| > 12$

$-(8x+3) > 12$

$-8x-3 > 12$

$+8x \quad -12 \quad -12 \quad +8x$

$\frac{-15}{8} > \frac{8x}{8}$

$\frac{-15}{8} > x$

$x < \frac{-15}{8}$

$+(8x+3) > 12$

$8x+3 > 12$

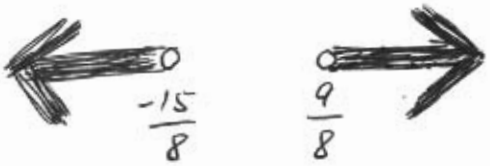
$-3 \quad -3$

$\frac{8x}{8} > \frac{9}{8}$

$x > \frac{9}{8}$

$\frac{9}{8} < x$

$(-\infty, \frac{-15}{8}) \cup (\frac{9}{8}, \infty)$



19500 section 1.8

86) $\left|\frac{x+1}{2}\right| \geq 4$

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

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

$-x-1 \geq 8$

$+x \quad -8 \quad -8 \quad +x$

$-9 \geq x$

$x \leq -9$

$+\left(\frac{x+1}{2}\right) \geq 4$

$\frac{x+1}{2} \geq 4$

$x+1 \geq 8$

$-1 \quad -1$

$x \geq 7$

$7 \leq x$

$(-\infty, -9] \cup [7, \infty)$

88) $3 - |2x+4| \leq 1$

$-1 + |2x+4| \quad -1 \quad +|2x+4|$

$2 \leq |2x+4|$

$2 \leq -(2x+4)$

$2 \leq -2x - 4$

$+2x \; -2 \quad +2x \quad -2$

$\frac{2x}{2} \leq \frac{-6}{2}$

$x \leq -3$

$2 \leq +(2x+4)$

$2 \leq 2x + 4$

$-4 \quad -4$

$\frac{-2}{2} \leq \frac{2x}{2}$

$-1 \leq x$

$(-\infty, -3] \cup [-1, \infty)$

90) $7|x+2| + 5 > 4$

$-5 \quad -5$

$7|x+2| > -1$

$-7(x+2) > -1$

$-7x - 14 > -1$

$+7x \quad +1 \quad +1 \quad +7x$

$\frac{-13}{7} > \frac{7x}{7}$

$\frac{-13}{7} > x$

$x < \frac{-13}{7}$

$+7(x+2) > -1$

$7x + 14 > -1$

$-14 \quad -14$

$\frac{7x}{7} > \frac{-15}{7}$

$x > \frac{-15}{7}$

$\frac{-15}{7} < x$

$(-\infty, \frac{-13}{7}) \cup (\frac{-15}{7}, \infty)$

Since $\frac{-15}{7} < \frac{-13}{7}$, the solution for this inequality is $(-\infty, \infty)$