SECTION A-3

EXERCISE A

Solve each compound inequality, then graph the solution set.

1) $3 < d + 5 < 8$

2) $-4 \leq 3x - 1 \leq 14$

3) $y - 3 > 1$ or $y + 2 < 1$

4) $p + 6 < 8$ or $p - 3 \geq 1$

5) $\frac{1}{2}x \geq 5$ or $3x - 7 \geq 2$

6) $-1 < 5 - 3b < 26$

Solve each absolute value inequality (remember, absolute value problems also require *two* problems to solve). Then, graph the solution set.

7) $|a| \geq 5$

8) $|w| \geq -2$

9) $|h + 6| < 3$

10) $|4k - 8| < 20$

11) $|g + 4| \leq 9$

12) $\left|\frac{1}{5}x - 3\right| \geq 1$

EXERCISE B

Solve each compound inequality, then graph the solution set.

13) $9 < 3t + 6 < 15$

14) $-11 < -4k + 5 < 13$

15) $3p + 1 \leq 7$ or $p - 9 \geq 7$

16) $2c - 1 < -5$ or $3c + 2 \geq 5$

17) $-2j > 44$ or $3j + 1 < j - 11$

18) $-3 \leq \frac{1}{3}x \leq 5$

Solve each absolute value inequality (remember, absolute value problems also require *two* problems to solve). Then, graph the solution set.

19) $|g| \leq 9$

20) $|3k| < 0$

21) $|2m + 3| \geq 8$

22) $|3w + 2| \leq 5$

23) $|-5y| < 35$

24) $\frac{|n - 3|}{2} < n$

EXERCISE C

25) Solve the compound inequality:

$$\frac{1}{24} < \frac{5}{8}x - \frac{1}{2} < \frac{15}{12}$$

26) The U.S. Postal Service defines an oversized package as one for which the length L of its longest side plus the distance D around its thickest part is more than 108 inches and less than or equal to 130 inches.

a) Write a compound inequality to describe this situation.

b) If the distance around the thickest part of the package is 80 inches, describe the range of lengths that would classify the package as oversized.

ANSWERS:

See Mr. Paull for all number line graphs.
1) $-2 < d < 3$
2) $-1 \leq x \leq 5$
3) $y > 4$ or $y < -1$
4) $p < 2$ or $p \geq 4$
5) $x \geq 3$
6) $-7 < b < 2$
7) $a \geq 5$ or $a \leq -5$
8) all real numbers
9) $-9 < h < -3$
10) $-3 < k < 7$
11) $-13 \leq g \leq 5$
12) $x \geq 20$ or $x \leq 10$
13) $1 < t < 3$
14) $-2 < x < 4$
15) $p \leq 2$ or $p \geq 8$
16) $c < -2$ or $c \geq 11$
17) $j < -6$
18) $-9 \leq x \leq 15$
19) $-9 \leq g \leq 9$
20) no solution
21) $m \geq 7.5$ or $m \leq 10.5$
22) $-7/3 \leq w \leq 1$
23) $-7 < y < 7$
24) $n > 1$
25) $13/5 < x < 14/5$
26a) $108 < L + D \leq 130$
26b) $28 < L \leq 50$