**Write an inequality to model each situation.**

1.) A bus can seat at most 48 students.

$48 \geq x \quad x \leq 48$

2.) In many states, you must be at least 16 years old to obtain a driver's license.

$16 \leq x$

$x \geq 16$

3.) It is not safe to use a light bulb of more than 60 watts in this light fixture.

$b > 60 \quad b \leq 60$

4.) At least 350 students attended the band concert Friday night.

$x \geq 350$

5.) The Navy's flying squad, the Blue Angels, makes more than 75 appearances each year.

$x > 75$

6.) **Describe a situation that you can represent using the inequality**: $x \geq 18$

The band has at least 18 members

***For what value(s) satisfies the following absolute value equations?***

7.) $4|k+5| = 8$

$|k+5| = 2$

$k+5 = 2$ $\quad k+5 = -2$

$k = -3$ $\quad k = -7$

8.) $|3c+1| - 4 = 13$

$|3c+1| = 17$

$3c+1 = 17$ $\quad = -17$

$c = 5.\overline{3}$ $\quad = -6$

9.) $-4|b-2| - 9 = -37$

$-4|b-2| = -28$

$|b-2| = 7$

$b-2 = 7$ $\quad = -7$

$b = 9$ $\quad = -5$

10.) $6 - 3|-8r-9| = -15$

$-6$ $\quad -6$

$-3|-8r-9| = -21$

$-3$ $\quad -3$

$|-8r-9| = 7$

$-8r-9 = 7$ $\quad -8r-9 = -7$

$+9\ +9$ $\quad +9\ +9$

$-8r = 16$ $\quad -8r = 2$

$r = -2$ $\quad r = -\frac{1}{4}$

$r = -2$ or $r = -\frac{1}{4}$

Solve each inequality.

**1.** $3f + 9 < 21$

$3f < 12$

$f < 4$

**2.** $4n - 3 \geq 105$

$4n \geq 108$

$n \geq 27$

**3.** $33y - 3 \leq 8$

$33y \leq 11$

$y \leq \frac{11}{33}$ ; $1/3$ ; $0.\overline{3}$

**4.** $2 + 2p > -17$

$2p > -19$

$p > \frac{-19}{2}$

**5.** $2(k + 4) - 3k \leq 14$

$2k + 8 - 3k \leq 14$

$-1k + 8 \leq 14$

$-1k \leq 6$

$k \geq -6$

**6.** $3(4c - 5) - 2c > 0$

$12c - 15 - 2c > 0$

$10c > 15$

$c > \frac{15}{10}$ ; $\frac{3}{2}$ ; $1.5$

**7.** $15(j-3)+3j<45$

$15j-45+3j<45$

$18j<90$

$j<5$

**8.** $22\geq 5(2y+3)-3y$

$22\geq 10y+15-3y$

$22\geq 7y+15$

$7\geq 7y$ $\quad 1\geq y$

$y\leq 1$

**9.** Write an inequality for the following statements:

a. The capacity exceeds 150 seats.

$x>150$

b. There were fewer than eighty-six people at the party.

$x<86$

**10.** Solve the following absolute value equations.

a. $\frac{2}{3}|2x-10|-11=-3$

$\frac{3}{2}\cdot\frac{2}{3}|2x-10|=8\cdot\frac{3}{2}$

$|2x-10|=12$

$2x-10=12$

$2x=22$

$x=11$

$2x-10=-12$

$2x=-2$

$x=-1$

b. $|4x - 5| + 15 = 36$

$|4x - 5| = 21$

$4x - 5 = 21$ $\quad$ $4x - 5 = -21$

$4x = 26$ $\quad$ $x = -4$

$x = 6.5$

## Hwk #25 Answers

| | | | |
|---|---|---|---|
| 4. -6, 6 | 5. -3, 3 | 6. -7, 7 | 7. -5, 5 |
| 8. -2, 2 | 10. No solution | 11. -3, 3 | 12. -4, 4 |
| 13. 3, 13 | 14. -8, 4 | 15. -3, 1 | 50. -3, 3 |

**4.** $|n| + 2 = 8$ **5.** $7 = |s| + 4$ **6.** $|x| - 10 = -3$

**7.** $4|d| = 20$ **8.** $-3|m| = -6$ **9.** $|y| + 3 = 3$

**10.** $12 = -4|k|$ **11.** $2|z| - 5 = 1$ **12.** $16 = 5|p| - 4$

**Solve each equation. If there is no solution, write *no solution*.**

**13.** $|r - 8| = 5$ **14.** $|c + 2| = 6$ **15.** $2 = |g + 1|$

**50.** $|a| + \frac{1}{2} = 3\frac{1}{2}$

Classwork Review:

Work on the following practice problems from the textbook to review for tomorrow's test --

Page: 175 - 177

Problems: 1, 5, 6, 8, 10 - 13, 14 - 16, 31 - 39, 58, 61, 63

- Show YOUR work!
- Complete on a separate sheet of paper.

IXL #9 - K.2 & K.10 due tomorrow at 6pm!