**Classwork & HW: Solving Algebraic Inequalities** **Date: Nov.21**

**Aim:** Solve algebraic inequalities with variables on both sides and graph it's solution set.

**Directions:**

Solve and Graph the solution set. Use pages 13-15 for #s 1 - 7 to show your work.

**HW:** complete #s 8 – 15 on pages 16-18.

# Did You Hear About . . .

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | ?? |

Solve each inequality or problem. Write the word under the correct solution in the box containing the exercise number.

**Answers 1-7**

| | |
|---|---|
| $x \geq 44$ | OFTEN |
| $x \leq -2\frac{1}{2}$ | AND |
| $x > 15$ | HER |
| $x > 4\frac{1}{3}$ | THE |
| $x < -7$ | MONKEYS |
| $x > 13$ | GUY |
| $x \geq 58$ | MET |
| $x \geq 8$ | WHEN |
| $x \leq -2$ | GIRL |
| $x \geq 5$ | IN |
| $x \leq -4\frac{2}{3}$ | FRIENDS |
| $x < -4$ | WHO |

**1** $7x + 2 > 4x + 15$

**2** $10 - 3x \geq 5x + 26$

**3** $9x + 40 \leq 15 - x$

**4** $3(x - 7) > 18$

**5** $75 < -5(4x + 1)$

**6** $6(2x - 9) \geq 4 + 11x$

**7** $8 - 3(4x - 1) \leq -49$

**8** $2(t + 5) > 4t - 7(t + 3)$

**9** $-4(3t - 9) \geq 8(-8 - t)$

**10** $14 - (9t - 2) < -t + 30$

**11** $45 > 12t + 3(t - 8) - 6$

**12** $5(8 - 2t) \leq 2 + 16(4 + t)$

**13** $7(5t - 4) - (2 + 15t) < 60$

**14** $9(9t - 4) \geq 12(12t - 3)$

**15** Suppose you write a book. The printer charges $4 per book to print it, and you spend $3500 on advertising. You sell the book for $15 a copy. How many copies must you sell so that your income from sales is greater than your total cost?

**Answers 8-15**

| | |
|---|---|
| $t > -1\frac{3}{4}$ | DOOR |
| $t < 8$ | SPINNING |
| $t \leq 0$ | AROUND |
| $\geq 308$ | CIRCLES |
| $t \leq 25$ | REVOLVING |
| $t \geq -1$ | STARTED |
| $t \leq 3\frac{1}{3}$ | IN |
| $\geq 319$ | TOGETHER |
| $t < 5$ | AND |
| $t > -6\frac{1}{5}$ | A |
| $t < 4\frac{1}{2}$ | GOING |
| $t \geq -3$ | DIZZY |