Algebra 1   Name_____

Compound Inequalities

EXAMPLES: Solve each compound inequality and graph its solution.

1) $5 - 3n > -10$ or $5n - 5 \geq 35$

2) $-9k + 7 \geq 16$ and $5 - k \leq 13$

3) $-36 \leq 9 - 9a < 90$

4) $4n - 5 > 11$ or $9 - 8n \geq 25$

Examples: Set up and solve a compound inequality.

5) Nine less than a number is between 3 and 8. Find the range of numbers that make this true.

6) Find three consecutive even integers suche that one half of their sum is between 15 and 21.

Practice: Solve each compound inequality and graph its solution.

7) $6 \leq 6a + 6 \leq -30$

8) $-13 \leq 5 - 3x < 2$

9) $3p - 2 \geq 4$ and $6 - 9p > -21$

10) $9x - 1 < -46$ or $1 - 4x \leq -11$

11) $-10 - n < -12$ or $9 + 4n \geq 21$
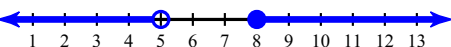
12) $8n + 5 < -75$ and $6 + 8n < 30$
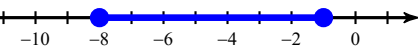
Practice: Set up and solve a compound inequality.

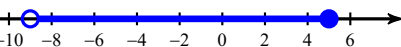13) The sum of four times a number and eight is between zero and twelve. Find the range of numbers.

14) A store is offering a $30 mail in rebate on all color printers. Luis is looking at different color printers that range in price from $175 to $260. How much can he expect to spend after the rebate?
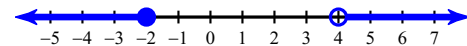
15) The perimeter of a triangle is between 10 and 15 inclusively. If two of the sides of the triangle are 3.7 and 5.2, find the range of possible measurements of the third side.
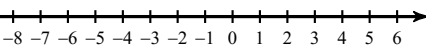
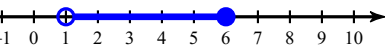# Answers to Compound Inequalities

1) $n < 5$ or $n \geq 8$:
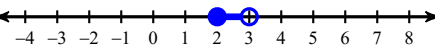
2) $-8 \leq k \leq -1$:

3) $-9 < a \leq 5$:

4) $n > 4$ or $n \leq -2$:

5) $12 < x < 17$ 6) 10, 12, 14

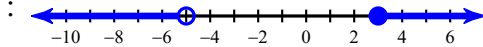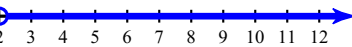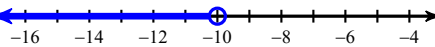7) No solution. :

8) $1 < x \leq 6$:   9) $2 \leq p < 3$:

10) $x < -5$ or $x \geq 3$:

11) $n > 2$:   12) $n < -10$:

13) $-2 < x < 1$ 14) \$145 < x < \$230   15) 2.1 $x \leq 2$ x $x \leq 2$ 7.1