DIGITAL

NAME _____ **DATE** _____

Module 5 Solving Linear Inequalities of
          One Variable
Lesson 5 Solving Conjunction Inequalities

**independent
practice**

Solve and graph.

1. $x > -4$ and $x < 3$ _____

2. $x \geq -4$ and $x > 0$ _____

3. $x \leq 5$ and $x \geq 8$ _____

4. $x \geq 3$ and $x \geq 7$ _____

5. $x \geq 0$ and $x \leq -5$ _____

6. $x > -1$ and $x < 5$ _____

7. $x > 4$ and $x < 2$ _____

8. $x \geq 2$ and $x < 4$ _____

9. $x \geq 2$ and $x > 5$ _____

10. $x < 3$ and $x < 0$ _____

11. $x - 4 < 4$ and $x + 3 < 5$ _____

12. $x + 3 < 5$ and $x - 4 > -8$ _____

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13. $3x > 15$ and $-2x \leq -12$ _____

14. $-\frac{1}{3}x > 1$ and $2x > -18$ _____

15. $2x - 1 < 7$ and $3x + 4 > 13$ _____

16. $-2x + 2 < 12$ and $4 - x > 5$ _____

17. $0 < x + 4 \leq 6$ _____

18. $-10 \leq x - 5 \leq -6$ _____

19. $-5 \leq 2x + 3 < 7$ _____

20. $-8 < -\frac{1}{2}x - 6 < -4$ _____

Journal

1. What do you think is the difference between the following conjunctions:

$x < 0$ **and** $x > 5$ $x < 0$ **or** $x > 5$

Explain the difference between the words "and" and "or." Which word is more restrictive? How do you think the solutions to the conjunctions above are different?

2. A student wrote the conjunction $0 < x > 5$. Explain how the student's notation should be simplified.

3. A student wrote the conjunction $5 < x < 2$. Explain why the student's statement is incorrect.

4. Explain how to use a graph to find the solution to a conjunction. How can you tell when a conjunction has no solution?

5. In the opening scene, Newt was not allowed into Club Roxy because he did not satisfy both requirements for admission, which are analogous to the inequalities of a conjunction. Think of a real-life situation that you can compare to a conjunction (i.e., a situation in which both of two requirements must be met).

Cumulative Review

Solve.

1. $6x + 2 = x + 17$ _____

2. $x - 2 = -3x + 6$ _____

3. $10x - 3 = 3x - 1$ _____

4. $2(x + 1) - 23 = -5x$ _____

5. $3x - 4 = 2(2x - 3) + 8$ _____

6. $3x - 14 = 2(x - 1) + x$ _____

7. In a triangle with a perimeter of 34 m, the first side is 3 m shorter than the second. The third side is 4 m longer than the second. Find the length of the longest side.

_____

_____

8. In an isosceles triangle, each base angle has half the measure of the vertex angle. Find the measure of each base angle.

_____

_____

9. How many pounds of coffee costing $2.25 per pound should be mixed with 6 lb of coffee costing $3.50 per pound to make a mixture that costs $3.00 per pound?

_____

_____

10. A family drove to a reunion at an average speed of 50 mph. They returned over the same road at an average speed of 40 mph. If the total drive time was 9 hours, find the distance to the reunion.

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