

Name _____

Date _____ Pd. _____

Notes: Solving Compound Inequalities *Continued*

Inequalities Containing *and* A compound inequality containing *and* is true only if both inequalities are true. The graph of a compound inequality containing *and* is the _____ of the graphs of the two inequalities. Every solution of the compound inequality must be a solution of both inequalities.

Example 1 Graph the solution set of $x < 2$ and $x \geq -1$.

Example 2 Solve $-1 < x + 2 < 3$ using *and*. Then graph the solution set.

Inequalities Containing *or* A compound inequality containing *or* is true if one or both of the inequalities are true. The graph of a compound inequality containing *or* is the _____ of the graphs of the two inequalities. The union can be found by graphing both inequalities on the same number line. A solution of the compound inequality is a solution of either inequality, not necessarily both.

Example Solve $2a + 1 < 11$ or $a > 3a + 2$.

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Exit Card: Solving Compound Inequalities *Continued*

Look at the graph below.



Which of these inequalities has the solution set that is shown in the graph?

F $-2 \leq x \leq 3$

G $-2 < x < 3$



H $-2 \leq x < 3$

J $-2 < x \leq 3$

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Homework: Page 342 – 343 (17 – 21, 26, 27, 33, 46 – 48, 50, 51)

17. $m \geq -4$ or $m > 6$	18. $7 < d < 11$	19. $-1 \leq g \leq 3$
20. 	21. 	
26. The Fujita Scale (F-scale) is the official classification system for tornado damage. One factor used to classify a tornado is wind speed. Use the information in the table to write an inequality for the range of wind speeds of an F3 tornado. [F3 is between 158 to 206 miles per hour]		
27. Each type of fish thrives in a specific range of temperatures. The optimum temperatures for sharks range from 18° C to 22° C, inclusive. Write an inequality to represent temperatures where sharks will <i>not</i> thrive.		
33. $4 < 2y - 2 < 10$		

46. About 20% of the time you sleep is spent in rapid eye movement (REM) sleep, which is associated with dreaming. If an adult sleeps 7 to 8 hours, how much time is spent in REM sleep?

47. A store is offering a \$30 mail-in rebate on all color printers. Luisana is looking at different color printers that range in price from \$175 to \$260. How much can she expect to spend after the mail-in rebate?

48. Rashid is selling chocolates for his school's fund-raiser. He can earn prizes depending on how much he sells. So far, he has sold \$70 worth of chocolates. How much more does he need to sell to reach a prize in category D? [Sales between \$121 to \$180 needed for category D]

Humans hear sounds with sound waves within the 20 to 20,000 hertz range. Dogs hear sounds in the 15 to 50,000 hertz range.

50. Write a compound inequality for the hearing range of humans and one for the hearing range of dogs.

51. What is the union of the two solution sets? The intersection?