

Algebra 1 5.4 *overlap*
Solve compound inequalities (and/or)
Graph solution sets of compound inequalities
Write and solve compound inequalities

T at least one

inequality
greater than
less than
Venn diagram

- intersection (*and*)
- union (*or*)
- compound inequality
- whiteboards

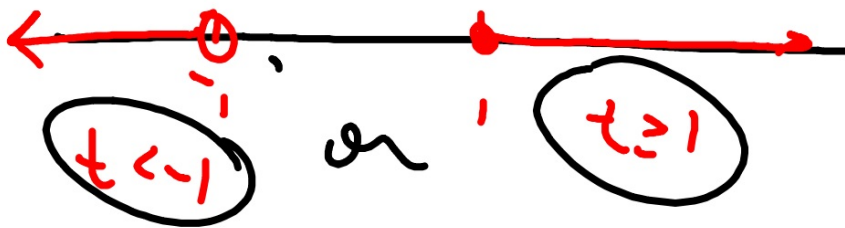
$$9. \quad \begin{array}{r} t+14 \geq 15 \\ -14 \quad -14 \\ \hline \end{array} \quad \text{or} \quad \begin{array}{r} t-7 < -10 \\ +9 \quad +9 \\ \hline \end{array}$$

$$t \geq 1$$

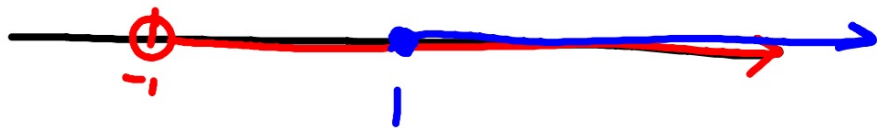
or

$$t < -1$$

$$1 \leq t$$



$$t > -1 \quad \text{or} \quad t \geq 1$$

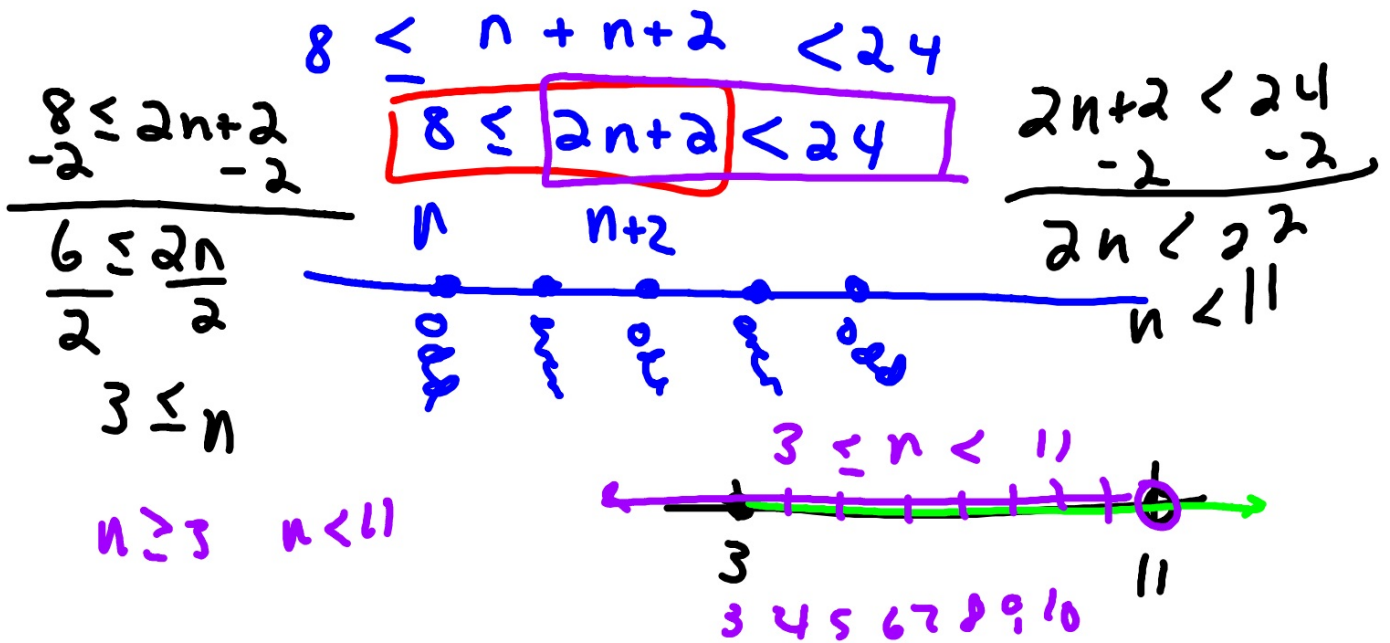


StudyTip

Intersections and Unions

The graphs of compound inequalities containing *and* will be an intersection. The graphs of compound inequalities containing *or* will be a union.

17. pos. odd int.

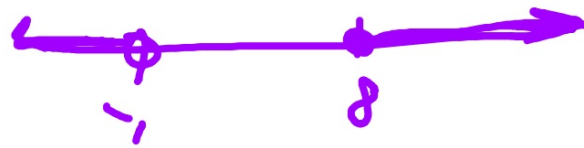


and



$n < -1$ or $n \geq 8$

or



1. $4 \leq p - 8$ and $p - 14 \leq 2$

2. $r + 6 < -8$ or $r - 3 > -10$

29.

$$\boxed{5 < n - 8 \leq 14}$$

$+8$ $+8$ $+8$

$$\frac{-n}{-1} < \frac{2}{-1}$$

$$n > -2$$

$$\boxed{13 \leq n \leq 22}$$

Whiteboards

Solve each compound inequality. Then graph the solution set.

3A. $a + 1 < 4$ or $a - 1 \geq 3$

3B. $x \leq 9$ or $2 + 4x < 10$

9 g fat at least 4 not more 7

9c

$$4 \leq c \leq 7$$

$$36 \leq 9c \leq 63$$

3. $4a + 7 \geq 31$ or $a > 5$

4. $2 \leq g + 4 < 7$

30. The sum of 3 times a number and 4 is between -8 and 10 .

$$\begin{array}{r} -8 \leq 3n + 4 \leq 10 \\ -4 \qquad \qquad -4 \qquad \qquad -4 \end{array}$$

$$\frac{-12}{3} \leq \frac{3n}{3} \leq \frac{6}{3}$$

$$-4 \leq n \leq 2$$

29. Eight less than a number is no more than 14 and no less than 5.

$$5 \leq n - 8 \leq 14$$

"between 5 and 14"

31. The product of -5 and a number is greater than 35 or less than 10 .

$$35 < -5n < 10$$

33. **SNAKES** Most snakes live where the temperature ranges from 75°F to 90°F, inclusive. Write an inequality for temperatures where snakes will *not* thrive.

=

$$t < 75 \quad t > 90$$

WB S.4 prac.

1-14