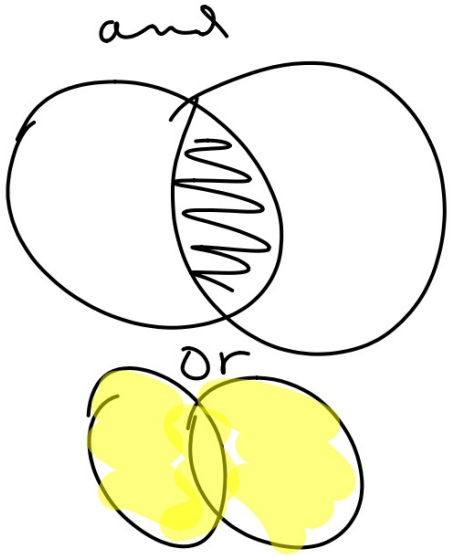
Algebra 1 5.4

Solve compound inequalities (and/or)

Graph solution sets of compound inequalities

Write and solve compound inequalities

inequality
greater than
less than
Venn diagram
intersection (*and*)
union (*or*)
compound inequality
whiteboards



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.

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

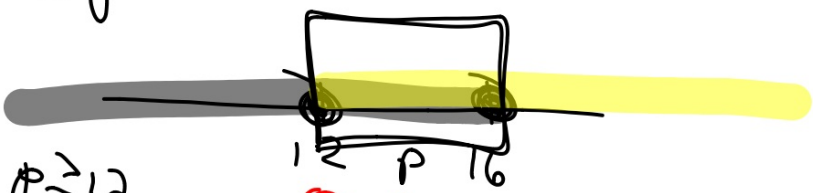
$4 \leq p - 8$
$+8 \quad +8$

$12 \leq p$

$p \geq 12$

$p - 14 \leq 2$
$+14 \quad +14$

$p \leq 16$

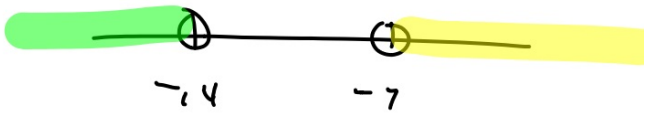


$12 \leq p \leq 16$

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

$-6 \quad -6 \qquad +3 \quad +3$

$r < -14$ or $r > -7$



$r < -14$ or $r > -7$

Whiteboards

Solve each compound inequality. Then graph the solution set.

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

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

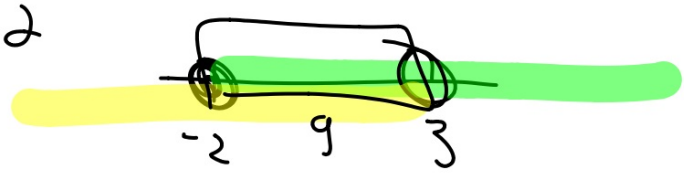
3. $4a + 7 \geq 31$ or $a > 5$

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

$2 \leq g + 4$
$-4 \quad -4$
$-2 \leq g$

$g \geq -2$

$g + 4 < 7$
$-4 \quad -4$
$g < 3$



$-2 \leq g < 3$

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

$-8 < 3n + 4 < 10$

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

"between 5 and 14"

$5 < n - 8 < 14$

$\leq \quad \leq$

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

$-5n > 35$ or $-5n < 10$

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.