

Notes: Solving Inequalities with Special Cases

$\frac{4x \leq 4x - 7}{-4x \quad -4x}$ $0 \leq -7 \text{ False}$ <p>No Solution</p>	$3(m-4) + 5 \geq 5m + 1 - 2m$ $3m - 12 + 5 \geq 3m + 1$ $3m - 7 \geq 3m + 1$ $-7 \geq 1 \text{ False}$ <p>No Solution</p>
$-14 + 2n \leq 7(n-1) - 5n$ $-14 + 2n \leq 7n - 7 - 5n$ $-14 + 2n \leq 2n - 7$ $-14 \leq -7 \text{ True}$ <p>Infinitely many Solutions</p>	$5(p-4) > 5p - 20$ $5p - 20 > 5p - 20$ $-20 > -20 \text{ False}$ <p>No Solution</p>

Explain how you can identify inequalities that have ...

... infinitely many solutions. Give 2 examples.

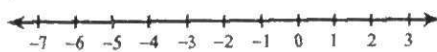
... no solution. Give 2 examples.

Solve each inequality and graph its solution.

1) $-100 < -2(1 + 7p)$ $p < 7$



2) $-8(-6b - 8) - 8 \leq -136$

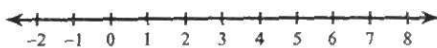


3) $108 < 4(3 - 4x)$ $x < -6$

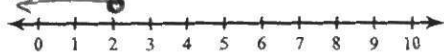


$-6 > x$

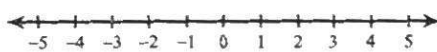
4) $128 \leq -8k - 8(8 - 5k)$



5) $-5(7n + 4) \geq -90$ $x \leq 2$



6) $4(k + 4) < 21 - k$



7) $5x + 6 < -2(x - 3) + 7x$ \emptyset

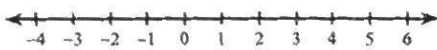


$5x + 6 < -2x + 6 + 7x$

$5x + 6 < 5x + 6$

$6 < 6$

8) $8x + 30 \leq -3(-8x + 4) - 2x$



9) $5(n - 4) + n \geq -23 + 6n$



$5n - 20 + n \geq -23 + 6n$

$6n - 20 \geq -23 + 6n$

$-20 \geq -23$

Infinitely many
Solutions

10) $-8m - 39 < -5 + 7(m - 7)$

