Algebra II Worksheet #4 Unit 1 selected solutions

Express each of the following sets using interval notation.

1. $\{ x \mid -2 < x < 3 \} = (-2 , 3)$

3. $\{ x \mid x > 2 \} = (2 , \infty)$

Solve each of the following for x. Represent the solution set as an interval or the union of intervals and sketch its graph.

5. $3x + 7 > 1$ and $-2x + 8 > 5$

$3x > -6 \qquad -2x > -3$

$x > -2$ and $x < 3/2$

$-2 < x < 1.5$

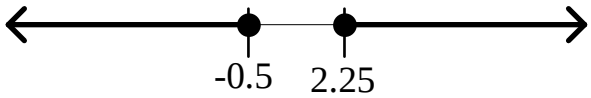
$S = (-2 , 1.5)$

6. $-4x + 10 \leq 1$ or $6x + 5 \leq 2$

$-4x \leq -9 \qquad 6x \leq -3$

$x \geq 9/4$ or $x \leq -1/2$

$S = (-\infty , -1/2] \cup [9/4 , \infty)$



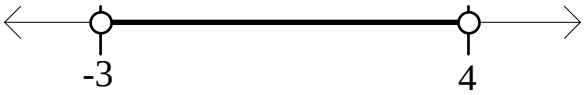
13. $2x + 5 < 13$ and $3x - 1 > -10$

$2x < 8 \qquad 3x > -9$

$x < 4$ and $x > -3$

$-3 < x < 4$

$S = (-3 , 4)$



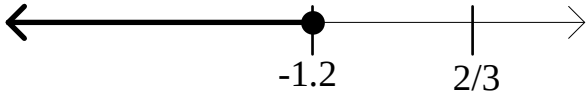
18. $9x - 1 \leq 5$ and $4 - 5x \geq 10$

$9x \leq 6 \qquad -5x \geq 6$

$x \leq 2/3$ and $x \leq -6/5$

$x \leq -6/5$

$S = (-\infty , -1.2]$



21. $8x + 4 < 16$ or $9x - 21 \geq 0$

$8x < 12 \qquad 9x \geq 21$

$x < 3/2$ or $x \geq 7/3$

$S = (-\infty , 3/2) \cup [7/3 , \infty)$

22. $x + 2 \leq 8$ or $1 - 3x \geq 10$

$-3x \geq 9$

$x \leq 6$ or $x \leq -3$

$x \leq 6$

$S = (-\infty , 6]$