

June 15, 2017

### Interval Notation

①  $x > 5$

a.)

b.)

c.)  $(5, \infty)$

d.) Check  
 $x = 10$   
 $10 > 5$  true

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②  $x \geq -\frac{1}{2}$

a.)

b.)  $[-\frac{1}{2}, \infty)$

③  $x \leq -6$

a.)

b.)  $(-\infty, -6]$

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#3)  $4 < x + 5 \leq 8$   
 \* Compound Inequality

①  $(x+5) > 4$   
 $\neq$   
 ②  $(x+5) \leq 8$

$4 < x + 5 \leq 8$   
 $-5 \quad \uparrow \quad -5 \quad -5$   
 $-1 < x \leq 3$

$(-1, 3]$

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$(-\infty, -1] \cup (3, \infty)$   
 ↑  
 union

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$-5 \leq -4x + 2 < 8$   
 $-7 \leq -4x < 6$   
 $\frac{7}{4} \leq x < -\frac{3}{2}$

ck  
 $-5 \leq -4(0) + 2 < 8$   
 $-5 \leq 2 < 8$  True ✓

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#17)  $\frac{-k-1}{-2} = \frac{-2\sqrt{k+16}}{-2}$   
 $\frac{-k}{2} + \frac{1}{2} = \sqrt{k+16}$   
 $\left(\frac{k}{2} + \frac{1}{2}\right)^2 = (\sqrt{k+16})^2$   
 $4\left(\frac{k^2 + 2k + 1}{4}\right) = k + 16$   
 $k^2 + 2k + 1 = k + 16$   
 $k^2 - 2k - 15 = 0$   
 $(k-7)(k+3) = 0$   
 $k = 7$  or  $k = -3$

Jun 15-10:31 AM