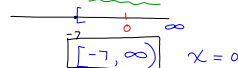


February 1, 2016
 Inequalities
 Ex. #a) $7x - 6 \leq 5(3x + 9) + 5$
 $7x - 6 \leq 15x + 45 + 5$
 $7x - 6 \leq 15x + 50$
 $\frac{-56}{8} \leq \frac{8x}{8}$
 $-7 \leq x$
 $x \geq -7$




$x = 0$
 $7(0) - 6 \leq 5(3(0) + 9) + 5$
 $-6 \leq 5(9) + 5$
 $-6 \leq 50$ ✓

$\{x \mid x \geq -7\}$

Feb 1-10:56 AM

#e) $\frac{-12}{-6} < \frac{-6x}{-6} < \frac{24}{6}$
 ① $-12 < -6x$ $-12 < -6(2) < 24$
 ② $-6x < 24$ $-12 < 0 < 24$

$2 > x > -4$
 or
 $-4 < x < 2$

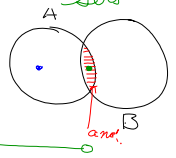
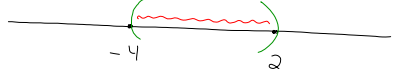


$(-4, 2)$
 $\{x \mid -4 < x < 2\}$

Feb 1-11:25 AM

#f) $\frac{-12}{-6} < \frac{-6x}{-6}$ and $\frac{-6x}{-6} < \frac{24}{6}$
 $2 > x$ $x > -4$

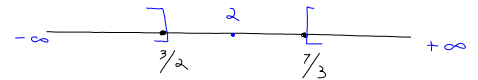
Intersection of sets $\rightarrow \cap$

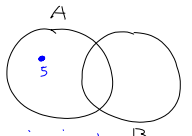
$(-4, 2) \leftrightarrow \{x \mid -4 < x \text{ and } x < 2\}$

Feb 1-11:31 AM

#h) $\frac{2x}{2} \leq \frac{3}{2}$ or $\frac{6x}{6} \geq \frac{14}{6}$
 $x \leq \frac{3}{2} = 1\frac{1}{2}$ or $x \geq \frac{7}{3} = 2\frac{1}{3}$



Union \cup



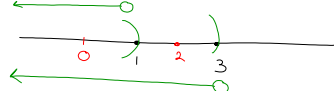
Union: 5 is in A or 5 is in B or 5 is in both
 $(-\infty, \frac{3}{2}] \cup [\frac{7}{3}, \infty)$
 $\{x \mid x \leq \frac{3}{2} \text{ or } x \geq \frac{7}{3}\}$

Feb 1-11:38 AM

Grp 2
 $(x-1)(2x-6) < 0$
 $2x^2 - 7x + 6$

① $(x-1) < 0$
 $x < 1$

② $2x-6 < 0$
 $2x < 6$
 $x < 3$



$x = 1$
 $(1-1)(2(1)-6) < 0$
 $(0)(-4)$
 $0 < 0$ false

Feb 1-11:45 AM