Compound Inequalities - Key

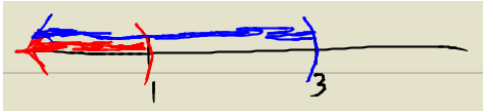
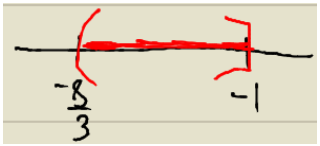
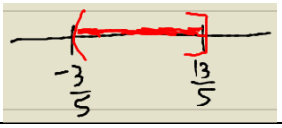
In problems 1-3, Use A = {1, 2, 3, 4, 5, 6} , B = {1, 3, 10}, and C = {4, 5, 7, 11} to find each set.

1. $A \cup B = \{1,2,3,4,5,6,10\}$	2. $A \cap B = \{1,3\}$
3. $B \cap C = \emptyset$ (empty set)	

In problems 4-5, use the graph of the inequality to find each set.

4. $A \cup B = (-\infty, \infty)$ $A \cap B = [1,7)$	5. $A \cup B = (-\infty,2) \cup [5,\infty)$ $A \cap B = \emptyset$ (empty set)

In problems 6-11, solve each compound inequality. Graph the solution set.

6. $x \le 4 \quad and \quad x > -3$ $(-3,4]$ 	7. $x < 1 \quad and \quad x < 3$ $(-\infty,1)$ 
8. $0 \le x < 3$ $[0,3)$ 	9. $\frac{-8}{3} < x \le -1$ $\left(\frac{-8}{3},-1\right]$ 
10. $-5 \le x < \frac{-2}{5}$ $\left[-5,\frac{-2}{5}\right)$ 	11. $\frac{-3}{5} < x \le \frac{13}{5}$ $\left(\frac{-3}{5},\frac{13}{5}\right]$ 

Compound Inequalities - Key

In problems 12-15, solve each compound inequality. Graph the solution set.

12.

$x+7<0 \quad and \quad x-6\geq 0$

$x<-7 \quad and \quad x\geq 6$

no solution (empty set)

13.

$x<\frac{26}{7} \quad or \quad x>3$

$(-\infty,\infty)$

14.

$x\leq 2 \quad or \quad x>25$

$(-\infty,2]\cup(25,\infty)$

15.

$x<\frac{15}{8} \quad or \quad x>\frac{1}{2}$

$(-\infty,\infty)$