

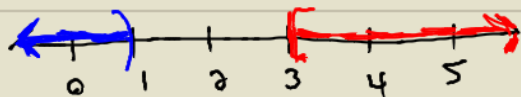
#1 $A = \{2, 3, 4, 5, 6\}$
 $B = \{1, 3, 5, 7, 9\}$
 $C = \{2, 4, 6, 8\}$

$A \cup C = \{2, 3, 4, 5, 6, 8\}$
 ↑
 "UNION"

#2

$A \cap C = \{2, 4, 6\}$
 ↑
 "INTERSECTION"

#3 $A = \{x | x \geq 3\}$ $B = \{x | x < 1\}$



a) $A \cap B$
 "INTERSECTION"

GRAPH WISE: WHERE THEY ARE BOTH SHADED

\emptyset

b) $A \cup B$
 "UNION"

GRAPH WISE: WHERE ANYTHING IS SHADED

$(-\infty, 1) \cup [3, \infty)$

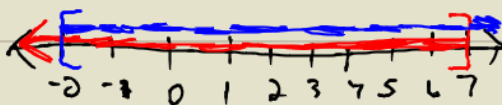
#4 $E = \{x | x \leq 3\}$ $F = \{x | x \geq -1\}$



a) $E \cap F$
 $[-1, 3]$

b) $E \cup F$
 $(-\infty, \infty)$

#5 $x - 5 \leq 2$ AND $3x - 2 \geq -8$
 $x \leq 2 + 5$ $3x \geq -8 + 2$
 $x \leq 7$ $3x \geq -6$
 $\frac{3x}{3} \geq \frac{-6}{3}$
 $x \geq -2$ AND $x \geq -2$
 "AND"

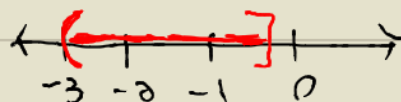


$[-2, 7]$

$\{x | -2 \leq x \leq 7\}$

#6 $-10 < 5x + 5 \leq 3$ → $5x + 5 > -10$ AND $5x + 5 \leq 3$

$-10 - 5 < 5x \leq 3 - 5$
 $-15 < 5x \leq -2$
 $-\frac{15}{5} < \frac{5}{5}x \leq \frac{-2}{5}$
 $-3 < x \leq -\frac{2}{5}$



$(-3, -\frac{2}{5}]$