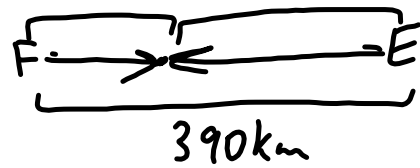


ex 28  $r \cdot t = d$

F	$x$	3	$3x$
E	$y$	3	$3y$



$$3x + 3y = 390$$

$$x = y - 30$$

$$3(y - 30) + 3y = 390$$

$$3y - 90 + 3y = 390$$

$$6y = 480$$

$$y = 80 \text{ km/hr}$$

$$x = y - 30$$

$$x = 80 - 30$$

$$x = 50 \text{ km/hr}$$

2x30       $r \cdot t = d$

with	$x+y$	2	$2x+2y$ ← 1300
against	$x-y$	3	$3x-3y$ ← 1650

$x = \text{plane's speed}$   
 $y = \text{wind speed}$

$$2x + 2y = 1300 \xrightarrow{\cdot 3} 6x + 6y = 3900$$

$$3x - 3y = 1650 \xrightarrow{\cdot 2} 6x - 6y = 3300$$

---


$$12x = 7200$$

$$x = 600 \text{ mph}$$

$$1200 + 2y = 1300$$

$$2y = 100$$

$$y = 50 \text{ mph}$$

ex  
34

$$2C + 3L = 14.55$$

$$1C + 2L = 8.77$$

$$C = 8.77 - 2L$$

$$2(8.77 - 2L) + 3L = 14.55$$

$$17.54 - 4L + 3L = 14.55$$

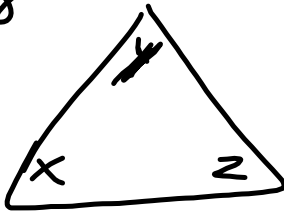
$$\begin{array}{r} -17.54 \\ -4L + 3L = -2.99 \end{array}$$

$$L = 2.99 \text{ latte}$$

$$\begin{aligned} C &= 8.77 - 2(2.99) \\ &= 8.77 - 5.98 \\ &= 2.79 \end{aligned}$$

Cap.

ex 38



$$x = y - 10$$

$$x = z - 20$$

$$x + y + z = 180$$

$$y - 10 = z - 20$$

$$y - 10 + y + z = 180$$

$$x = z - 20$$

$$50 = z - 20$$

$$70 = z$$

$$x = y - 10$$

$$x = 60 - 10$$

$$x = 50$$

$$y - z = -10$$

$$2y + z = 190$$


---


$$3y = 180$$

$$y = 60$$

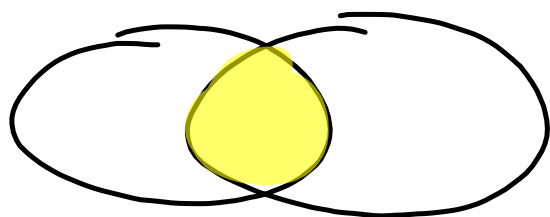
$$e < 48 \quad \begin{array}{l} A + B + C = 85 \\ B = 5 + C \\ A = 4 + 2C \end{array}$$

$$\begin{array}{l} B = 5 + C \\ B = 5 + 19 = 24 \end{array}$$

$$\begin{array}{l} 4 + 2C + 5 + C + C = 85 \\ 4C + 9 = 85 \\ 4C = 76 \\ C = 19 \end{array}$$

$$\begin{array}{l} A = 4 + 2C \\ A = 4 + 2(19) = 42 \end{array}$$

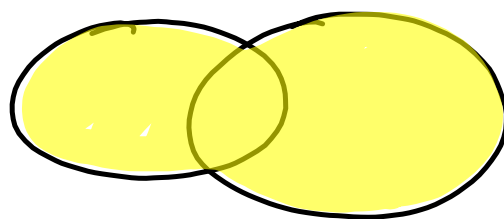
9.1 p.566



intersection



$\cap$   
And



union

$\cup$   
Or

$$A = \{1, 2, 3, 4, 5, 6\}$$

$$B = \{1, 3, 5\}$$

$$C = \{1, 6\}$$

$$D = \{4\}$$

$$\underline{\text{ex 8}} \quad A \cap B = \{1, 3, 5\}$$

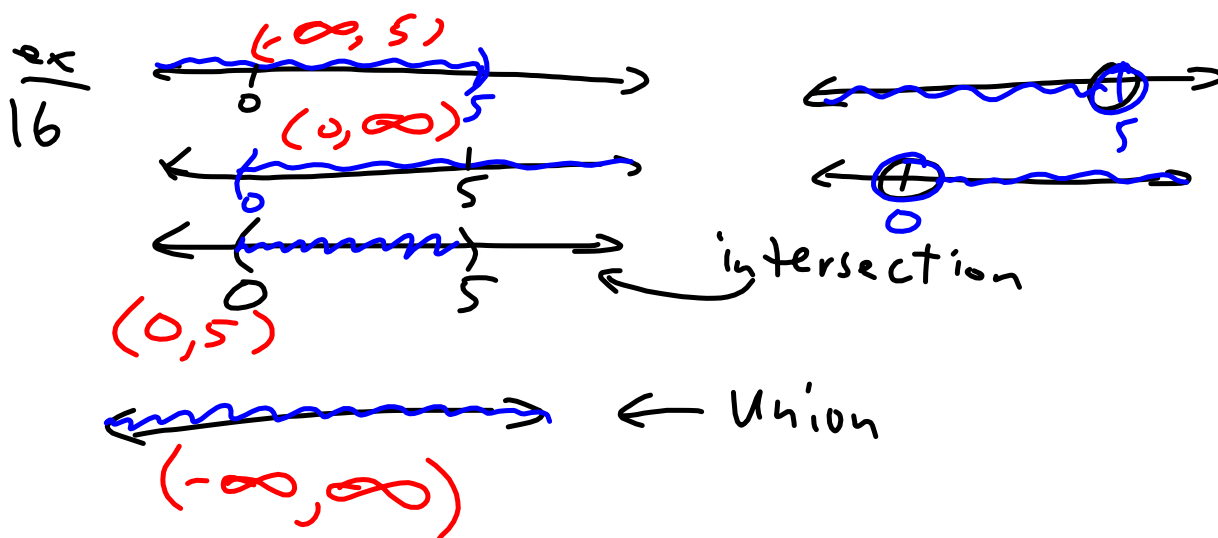
$$\underline{\text{ex 10}} \quad B \cap C = \{1\}$$

$$\underline{\text{ex}} \quad B \cap D = \{\}$$

$$\text{ex} \quad C \cup D = \{1, 4, 6\}$$

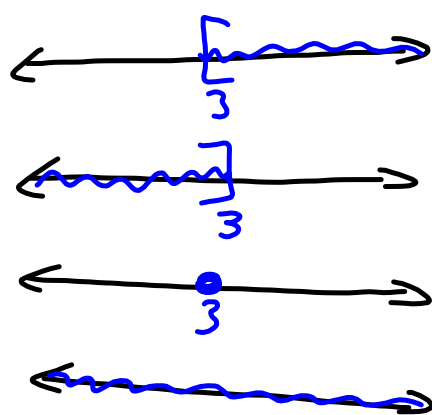
$$\begin{array}{c} \{ \} \\ \downarrow \\ \underline{\text{ex 12}} \quad A \cap \emptyset = \{ \} \\ \text{or} \\ \emptyset \end{array}$$

$$\underline{\text{ex 14}} \quad B \cup D \\ = \{1, 3, 4, 5\}$$



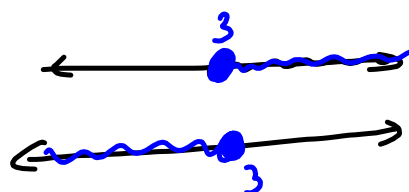


Ex 18




intersection

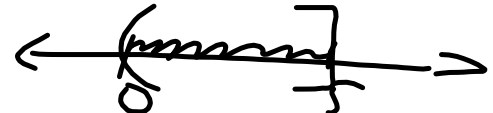
union



Ex 20  $x < 5$  and  $x > 0$   $(0, 5)$



what if...  $x \leq 5$  and  $x > 0$   $(0, 5]$

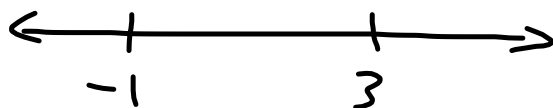
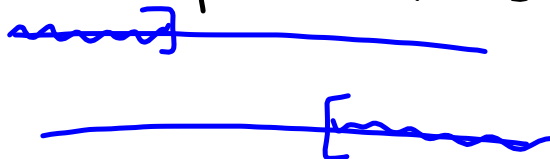


ex 22  $x \geq 3$  and  $x \geq 6$   $[6, \infty)$



$\emptyset$  or  $\{ \}$

ex 24  $x \leq -1$  and  $x \geq 3$




ex  
30

$$7x + 6 \leq 48$$

$$\begin{array}{r} -6 \\ -6 \end{array}$$

$$7x \leq 42$$

$$\frac{7x}{7} \leq \frac{42}{7}$$

$$x \leq 6$$


$$(-\infty, 6]$$

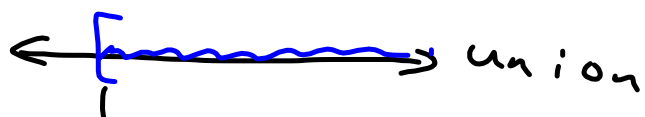
and

$$\frac{-4x}{-4} \geq \frac{-24}{-4}$$

$$x \leq 6$$

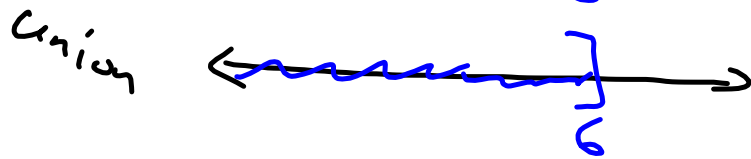
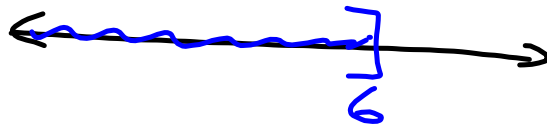
If you  
xor i  
BY a  
neg. #,  
flip the  
inequality.

$$\text{ex 36 } x \geq 1 \text{ or } x \geq 8$$



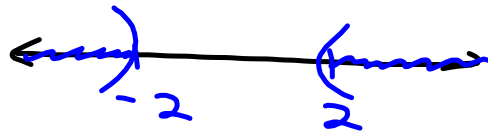
$$[1, \infty)$$

ex 38  $x \leq -2$  or  $x \leq 6$

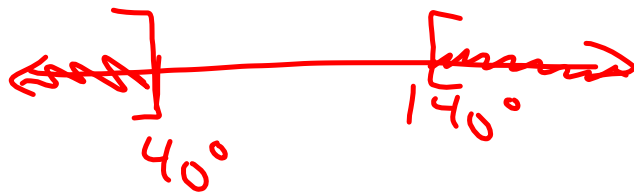


$$(-\infty, 6]$$

$$\underline{p \times 42} \quad x+1 > 3 \quad \cup \quad x+4 < 2$$
$$x > 2 \quad \quad \quad x < -2$$



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



ex 48  $[-1, \infty) \cap (-\infty, 9]$

$[-1, 9]$




$$x < 52 \quad \underline{[-9, 1]} \cup \underline{(-\infty, -3)}$$



ex 56  $x > -1$  and  $x < 7$

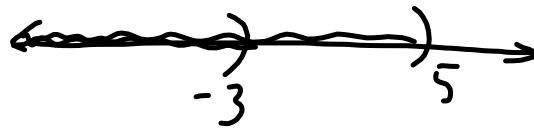
$\cap$



$(-1, 7)$

ex 58

$$x < 5 \text{ or } x < -3$$
$$\cup$$



$$(-\infty, 5)$$