

Sec 2.4

#5) 2^k

#11)

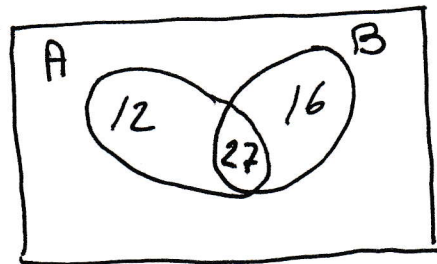
Task A = 39

Task B = 43

Both $A \cap B = 27$

at least one is $A \cup B = 39 + 43 - 27 = 55$

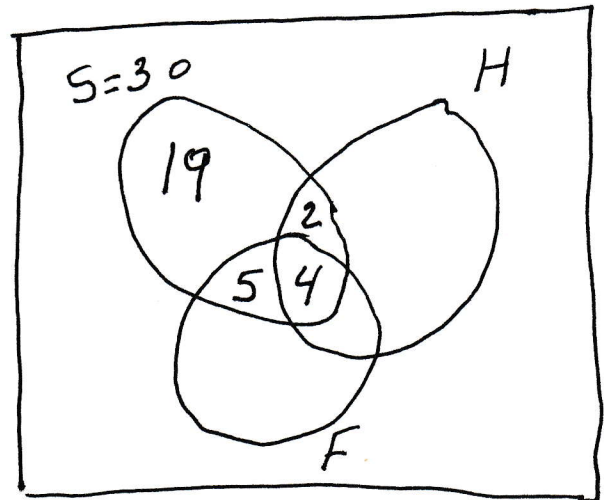
or



$12 + 27 + 16 = 55$

Good #13)

$S = 30$
 $S \cap H = 6$
 $H \cap F = 8$
 $F \cap S = 9$
 $S \cap F \cap H = 4$



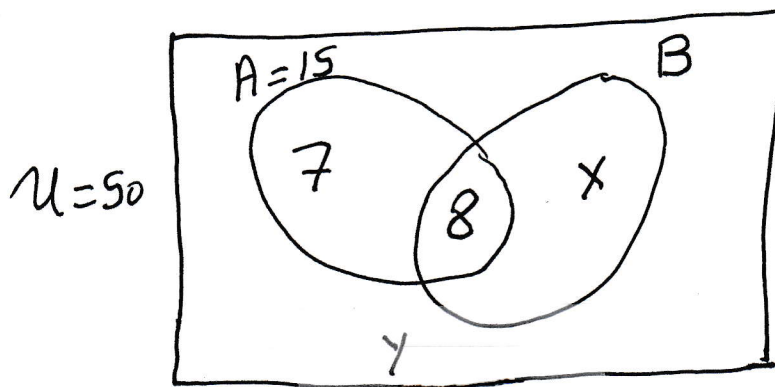
$S \text{ only} = 19$

#17)

$$U = 50, \quad A = 15, \quad B' = 20$$

7 in A and not in B $\rightarrow A \cap B' = 7$

Very
Good



Step 1 * $B' = 20$ or outside $B = 20$

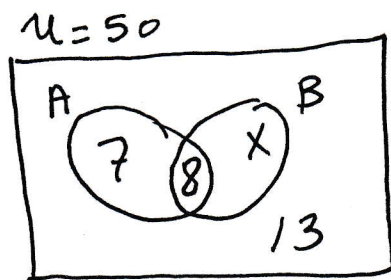
Notice

$$\text{outside } B = 7 + y$$

$$20 = 7 + y$$

$$13 = y$$

Step 2 *

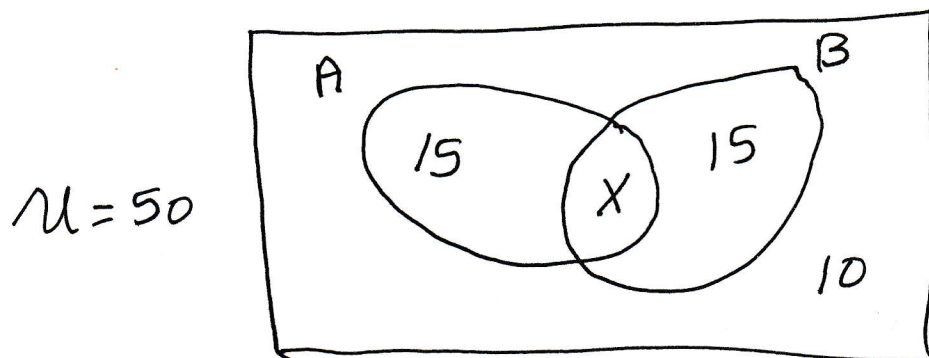


$$7 + 8 + x + 13 = 50$$

$$x = 22$$

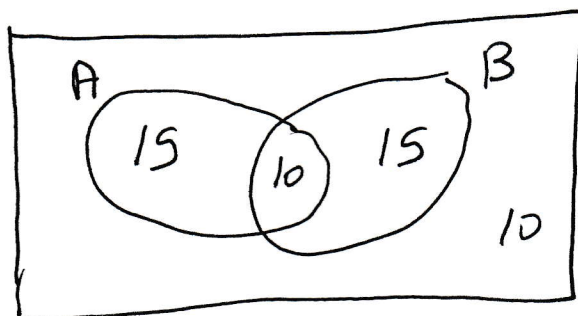
#19)

$$U = 50, \quad A' \cap B' = 10$$
$$A - B = B - A = 15$$



$$15 + X + 15 + 10 = 50 \Rightarrow X = 10$$

Then



a) $A \cup B = 15 + 10 + 15 = 40$

b) $A \cap B = 10$

More: $A = 25$, $B = 25$
 $A \cap B' = 15$, $B \cap A' = 15$

De Morgan Law $\left[\begin{array}{l} (A \cup B)' = 10 \\ A' \cup B' = 40 \end{array} \right.$, $\begin{array}{l} A' \cap B' = 10 \\ (A \cap B)' = 40 \end{array}$