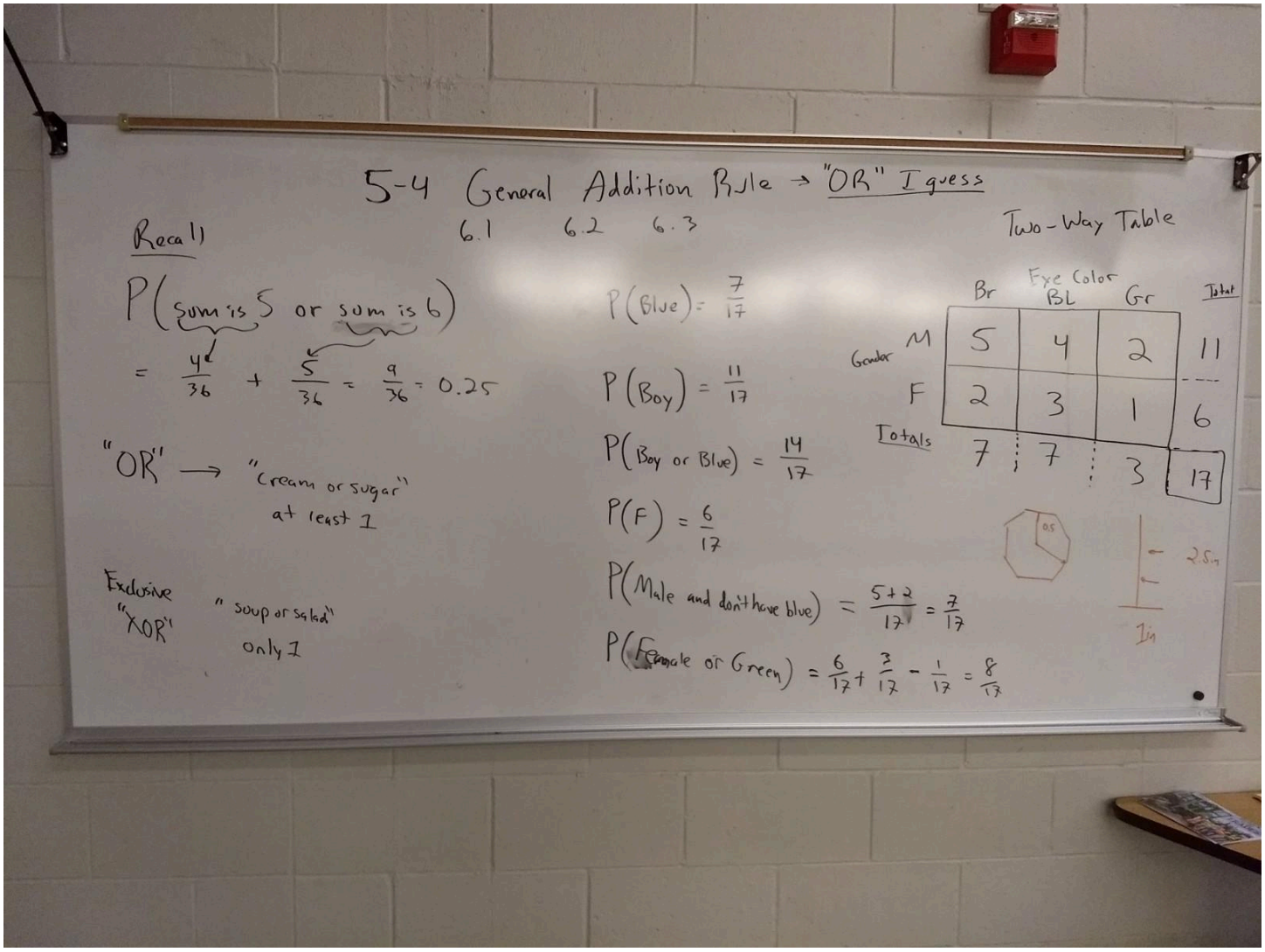
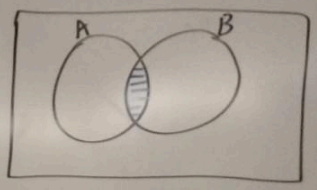
5-4 Notes


5-4 General Addition Rule → "OR" I guess
6.1 6.2 6.3
Recall
P(sum is 5 or sum is 6)
= 4/36 + 5/36 = 9/36 = 0.25
"OR" → "cream or sugar" at least 1
Exclusive "XOR"
"soup or salad" only 1
P(Blue) = 7/17
P(Boy) = 11/17
P(Boy or Blue) = 14/17
P(F) = 6/17
P(Male and don't have blue) = 5+2/17 = 7/17
P(Female or Green) = 6/17 + 3/17 - 1/17 = 8/17
Two-Way Table
Eye Color
Br BL Gr Total
Gender
M 5 4 2 11
F 2 3 1 6
Totals 7 7 3 17
0.5
2.5in
1in

# General Addition Rule

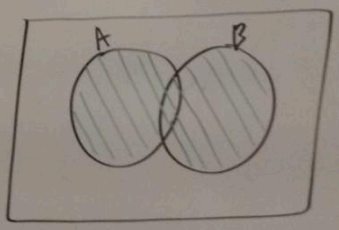
$\cap$ = AND = "intersect"




If A and B are any two events resulting from some chance process, the general addition rule says that

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

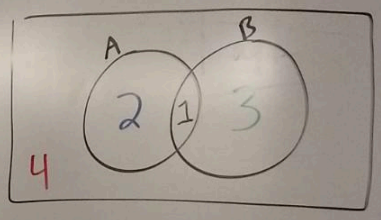
$\cup$ = OR = "union"



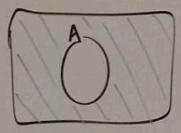

* if A & B are mutually exclusive then $P(A \cap B) = 0$

# Two-Way Table VS Venn-Diagram

| | $B$ | $B^c$ |
|---|---|---|
| $A$ | $A \cap B$ 1 | $A \cap B^c$ 2 |
| $A^c$ | $A^c \cap B$ 3 | $A^c \cap B^c$ 4 |




$A^c$




6.7
6.13
6.25

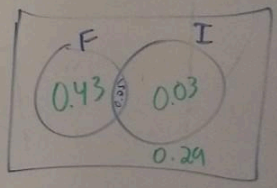
6.29
6.31
& sheet

**Ex** A survey of a large apartment complex reveals

68% use facebook ✓

28% use Instagram

25% use both




| Facebook \ Insta | Y | N | |
|---|---|---|---|
| Y | 0.25 | 0.43 | 0.68 |
| N | 0.03 | 0.29 | 0.32 |
| | 0.28 | 0.72 | 1 |