# Probability (Chapter 3)

3A #3. (a) (i) 0.21

show working

(ii) 0.19 + 0.14 = 0.33

(b) (1200)(0.21) = 252

1200
.21
1200
2400
252.00

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Ex. You have the Scrabble tiles for

T R I G O N O M E T R Y

(a) Select one tile randomly. Find P(vowel).

$$\frac{4 \text{ vowels}}{12 \text{ tiles}} = \frac{1}{3}$$

(b) Throw away the 1st tile (vowel). Select a 2nd tile.

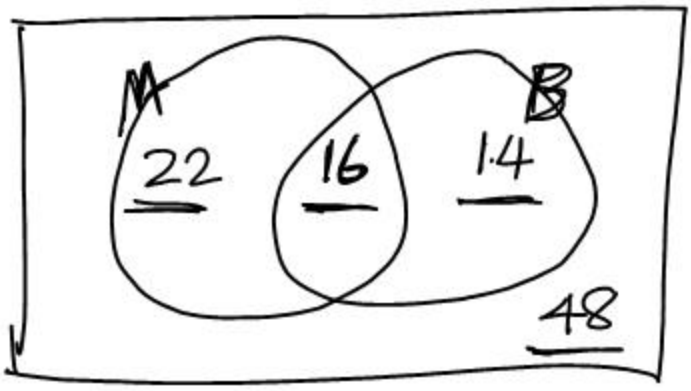
$$P(2^{\text{nd}} \text{ vowel} \mid \underbrace{1^{\text{st}} \text{ vowel}}_{\text{condition}}) = \frac{3}{11}$$

← conditional probability

# Venn Diagrams

A school has 100 IB students. 38 of them take HL Math and 30 take HL Bio. 48 of them don't take either of those. How many students take both of them? 16

$38 - 16 = 22$ $\quad 30 - 16 = 14$




$38 + 30 = 68$ $\quad 100 - 48 = 52$

$68 - 52 = 16$

Select 1 student:

$$P(M \cup B) = \frac{52}{100}$$

$\cup$ = union (or) ← inclusive: one or both

$$P(M \cap B) = \frac{16}{100}$$

$\cap$ = intersection (and)

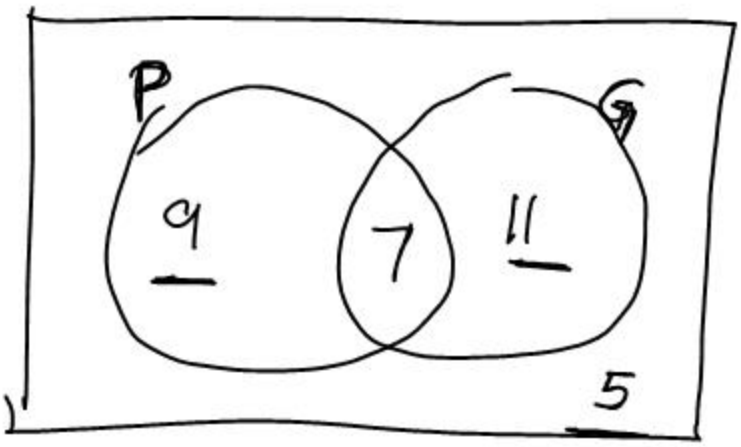
$$P(M') = \frac{62}{100}$$

$M'$ = complement of $M$

$P(M \mid B) = ?$

taking Math given that they take biology

3B #4.




(a) $P(G \cap P') = \frac{11}{32}$

(b) $P(P \cap G') = \frac{9}{32}$

* $P(G' \cap P') = \frac{5}{32}$

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HW 3A #1, 4, 5 3B #1-3