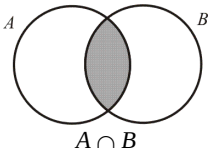
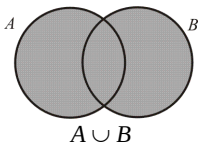
$n(A)$ –number of element in set A.
A' – Complement of set A.

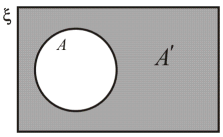
(b) Venn Diagram



$A \cap B$

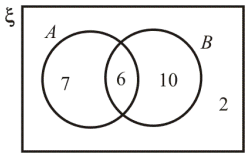


$A \cup B$



A'

Example:



$n(A) = 7 + 6 = 13$
$n(B) = 6 + 10 = 16$
$n(A \cap B) = 6$
$n(A \cup B) = 7 + 6 + 10 = 23$
$n(A \cap B') = 7$
$n(A' \cap B) = 10$
$n(A \cap B)' = 7 + 10 + 2 = 19$
$n(A \cup B)' = 2$

4. MATHEMATICAL REASONING

(a) Statement
A mathematical sentence which is either true or false but not both.

(b) Implication
If a, then b
a – antecedent
b – consequent

'p if and only if q' can be written in two implications:
If p, then q
If q, then p

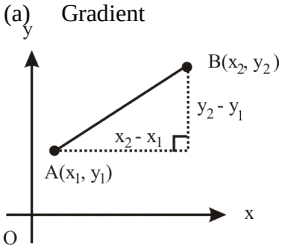
(c) Argument
Three types of argument:
Type I
Premise 1: All A are B
Premise 2 : C is A
Conclusion: C is B

Type II
Premise 1: If A, then B
Premise 2: A is true
Conclusion: B is true.

Type III
Premise 1: If A, then B
Premise 2: Not B is true.
Conclusion: Not A is true.

5. THE STRAIGHT LINE

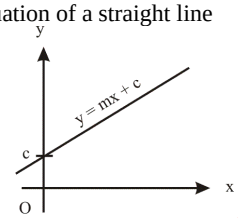
(a) Gradient



Gradient of AB =

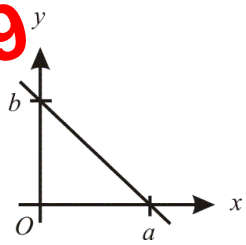
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

(b) Equation of a straight line



Gradient Form:
$y = mx + c$

m = gradient
c = y-intercept



Intercept Form:

$$\frac{x}{a} + \frac{y}{b} = 1$$

a = $x-$intercept
b = $y-$intercept

Gradient of straight line $m = -\dfrac{y\text{-intercept}}{x\text{-intercept}}$

$$= -\frac{b}{a}$$

6. STATISTICS

(a) Class, Modal Class, Class Interval Size, Midpoint, Cumulative frequency, Ogive
Example :
The table below shows the time taken by 80 students to type a document.

Time (min)	Frequency
10-14	1
15-19	7