

COMPOSITE LATERAL CEPHALOMETRIC ANALYSIS

SKELETAL ANALYSIS					
Sagittal Analysis			Vertical Analysis		
< SNA	$(80 - 84^{\circ})$		< SN - Mandibular Plane	$(32^{\circ} \pm 4^{\circ})$	
< SNB	$(78 - 82^{\circ})$		< SN - Palatal Plane	$(6^{\circ} \pm 4^{\circ})$	
< ANB	$(0^{\circ} - 4^{\circ})$		< SN - Occlusal Line	$(17^{\circ} \pm 4^{\circ})$	
< Facial Angle	$(81^{\circ} \pm 4)$		< MMA	$(25^{\circ} \pm 4^{\circ})$	
AO-BO Distance	$F=0\text{ mm}$ $M=-1\text{ mm}$		< Upper Occlusal	$(11^{\circ} \pm 4^{\circ})$	
Anterior Cranial Base Length	X		< Lower Occlusal	$(14^{\circ} \pm 4^{\circ})$	
Mandibular Corpus Length	$(X + 7)$		< Y axis (with SN)	$(66^{\circ} \pm 4^{\circ})$	
Co – A Point			Sum of Posterior Angles Saddle + Articular + Gonial + +	$(396^{\circ} \pm 4)$	
Co – Gn			Posterior Face Height : Anterior Face Height	$(65\% \pm 4)$	
MMD			Lower Ant. Face Height : Total Ant. Face Height	$(54\% \pm 4)$	

DENTAL ANALYSIS					
< UI - SN	$(102^{\circ} \pm 5)$		< UI – NA	(22°)	
< UI - Palatal	$(108^{\circ} \pm 5)$		< LI – NB	(25°)	
< IMPA	$(90^{\circ} \pm 5)$		UI – NA Distance	(4 mm)	
< IIA	$(135^{\circ} \pm 5)$		LI – NB Distance	(4 mm)	
LI – A-Pog Line	(3 mm)		Hold away Ratio LI - NB : Pog - NB	$1 : 1$	

SOFT TISSUE ANALYSIS					
Upper Lip to E line	$(-3 \pm 2\text{ mm})$		Upper Lip to S line	$(0 \pm 2\text{ mm})$	
Lower Lip to E line	$(-2 \pm 2\text{ mm})$		Lower Lip to S line	$(0 \pm 2\text{ mm})$	
< Naso Labial					



DEPARTMENT ORTHODONTICS

NAME: _____

ROLL NO.: _____

Class: _____

Session: _____

Department of Orthodontic
Instructions for Log Book Management

1. Write your full name and roll no on the log book.
2. Write on all pages with pen and do not tear any page.
3. Do rough work with pencils first and neat with pen.
4. Get your log book signed by the supervisor on the same day.
5. All steps of cephalometric analysis cast analysis and wire work should be examined and signed by same supervisor.
6. Write all your daily work in the department indoor patient register.
7. Clean and wash your instruments, pack in sterilization pouches and hand over to assistant for sterilization & storage.
8. Lateral ceph should be allotted to each student with signatures of the superior and returned to the superiors.
9. Cast should be handled with care. No teeth should be broken on the cast.
10. Each patient should be allotted to students after diagnosis by the supervisor.

ARCH PERIMETER ANALYSIS

MANDIBLE		MAXILLA	
Space Available		Space Available	
Space Required		Space Required	
ALD		ALD	

MIXED DENTITION ANALYSIS

Space Available = Arch Perimeter = _____mm.

Space Required = I + 2X + Ceph. Correction + COS = _____mm.

I = sum of $\frac{2}{1} \frac{1}{2}$ on cast = _____mm.

X = Estimated sum of $\frac{5}{4} \frac{3}{}$ = _____mm.

X' = Radiographic sum of $\frac{5}{4} \frac{3}{}$ = _____mm.

Y = sum of $\frac{e}{d} \frac{c}{}$ on cast = _____mm.

Y' = Radiographic sum of $\frac{e}{d} \frac{c}{}$ = _____mm.

X = $\frac{X' Y}{Y}$ = _____mm.

Ceph. Correction = (Proposed FMIA – Actual FMIA) x 0.8 = _____mm.

COS = $\frac{Rt. Side + Lt. Side}{2} + 0.5$ = _____mm.

Space Required = I + 2X + Ceph. Correction + COS = _____mm.

ALD = Space Available -- Space Required = _____mm.

BOLTON ANALYSIS

Overall Ratio (X)

Overall ratio (X) = $\frac{\text{sum of Mandibular 12}}{\text{sum of Maxillary 12}} \times 100$ (*normal= 91.3*)

= _____ x 100 = _____

If X > 91.3

Desired Sum of Mandibular 12 = $\frac{\text{Actual sum of max. 12} \times 91.3}{100}$ = _____

Amount of overall excessive Mandibular Tooth Material:

Actual Sum of Mandibular 12 – Desired sum of Mandibular 12 = _____

If X < 91.3

Desired Sum of Maxillary12 = $\frac{\text{Actual sum of man. 12} \times 100}{91.3}$ = _____

Amount of overall excessive Maxillary Tooth Material:

Actual Sum of Maxillary 12 – Desired sum of Maxillary 12 = _____

Anterior Ratio (Y)

Anterior ratio (Y) = $\frac{\text{sum of Mandibular 6}}{\text{sum of Maxillary 6}} \times 100$ (*normal= 77.2*)

= _____ x 100= _____

If Y > 77.2

Desired Sum of Mandibular 6 = $\frac{\text{Actual sum of max. 6} \times 77.2}{100}$ = _____

Amount of overall excessive Mandibular Tooth Material:

Actual Sum of Mandibular 6 – Desired sum of Mandibular 6 = _____

If Y < 77.2

Desired Sum of Maxillary 6= $\frac{\text{Actual sum of man. 6} \times 100}{77.2}$ = _____

Amount of overall excessive Maxillary Tooth Material:

Actual Sum of Maxillary 6 – Desired sum of Maxillary 6 = _____

Department of Orthodontics Department

Required Quota for Final Year BDS

S.R No	Lateral Ceph	Cast Analysis		Wire Work				
		ALD	Bolton Analysis	Adam Clasp	Labial Bow	Z- Spring	Canine Retractor	Palatal Finger Spring
1								
2								
3								
4								
5								

Student Signature: _____

Supervisor Signature: _____

Department Of Orthodontics
Required Instruments For Filling

Examination Instruments:

1. Mouth Mirror
2. Probe (Bault & Sickle Shape)
3. Tweezer

For Lateral Ceph:

1. Tracing Sheets
2. Tape
3. Geometry Box
4. Pointer For Color (Red / Blue / Green / Black)
5. Plain White Paper

For Cast Analysis:

1. Divider
2. Geometry Box
- 3.

For Wire Works :

1. Adam Plier
2. Round Plier
3. Flat Plier
4. Heavy Wire Cutter

0.5 / 0.7 Mm Wire

CAST ANALYSIS
Casts Apart

MANDIBULAR ARCH			
Arch Shape		Proclined	
Symmetry		Retroclined	
Torus Mandibularis		Diastema	
Labial Frenum		Torsiversion	
Midline		Labio/Buccoversion	
Teeth Present		Lingo version	
Teeth Missing		Supraversion	
Supernumeraries		Infraversion	
Retained Teeth		Curve of Spee Rt	
Crowding		Curve of Spee Lt	

MAXILLARY ARCH			
Arch Shape		Proclined	
Symmetry		Retroclined	
Torus Palatinus		Diastema	
Labial Frenum		Torsiversion	
Midline		Labio/Buccoversion	
Teeth Present		Lingoversion	
Teeth Missing		Supraversion	
Supernumeraries		Infraversion	
Retained Teeth		Crowding	

Casts in Occlusion

RIGHT		LEFT	
Molar Relation		Molar Relation	
Cuspid Relation		Cuspid Relation	

Incisor Relation		Over Jet	
Cross-bite		Over Bite	

Department Of Orthodontics
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Casts Apart

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Casts in Occlusion

RIGHT		LEFT	
Molar Relation		Molar Relation	
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BOLTON ANALYSIS

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Anterior Ratio (Y)

Anterior ratio (Y) = $\frac{\text{sum of Mandibular 6}}{\text{sum of Maxillary 6}} \times 100$ (normal= 77.2)

= _____ x 100= _____

If Y > 77.2

Desired Sum of Mandibular 6 = $\frac{\text{Actual sum of max. 6} \times 77.2}{100}$ = _____

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COMPOSITE LATERAL CEPHALOMETRIC ANALYSIS

SKELETAL ANALYSIS					
Sagittal Analysis			Vertical Analysis		
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< SNB	(78 - 82 °)		< SN - Palatal Plane	(6° ± 4°)	
< ANB	(0° - 4°)		< SN - Occlusal Line	(17° ± 4°)	
< Facial Angle	(81° ± 4)		< MMA	(25° ± 4°)	
AO-BO Distance	F=0 mm M=-1mm		< Upper Occlusal	(11° ± 4°)	
Anterior Cranial Base Length	X		< Lower Occlusal	(14° ± 4°)	
Mandibular Corpus Length	(X + 7)		< Y axis (with SN)	(66° ± 4°)	
Co – A Point			Sum of Posterior Angles Saddle + Articular + Gonial + +	(396° ± 4)	
Co – Gn			Posterior Face Height : Anterior Face Height	(65% ± 4)	
MMD			Lower Ant. Face Height : Total Ant. Face Height	(54% ± 4)	

DENTAL ANALYSIS					
< UI - SN	(102° ± 5)		< UI – NA	(22°)	
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< IMPA	(90° ± 5)		UI – NA Distance	(4mm)	
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SOFT TISSUE ANALYSIS					
Upper Lip to E line	(-3±2mm)		Upper Lip to S line	(0±2mm)	
Lower Lip to E line	(-2±2mm)		Lower Lip to S line	(0±2mm)	
< Naso Labial					

ARCH PERIMETER ANALYSIS

MANDIBLE		MAXILLA	
Space Available		Space Available	
Space Required		Space Required	
ALD		ALD	

MIXED DENTITION ANALYSIS

Space Available = Arch Perimeter = mm.

Space Required = I + 2X + Ceph. Correction + COS = mm.

I = sum of

2	1	1	2
---	---	---	---

 on cast = mm.

X = Estimated sum of

5	4	3
---	---	---

 = mm.

X' = Radiographic sum of

5	4	3
---	---	---

 = mm.

Y = sum of

	e	d	c
--	---	---	---

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X = $\frac{X'Y}{Y}$ = mm.

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	e	d	c
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AO-BO Distance	$F=0\text{ mm}$ $M=-1\text{ mm}$		< Upper Occlusal	$(11^{\circ} \pm 4^{\circ})$	
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SOFT TISSUE ANALYSIS					
Upper Lip to E line	$(-3 \pm 2\text{ mm})$		Upper Lip to S line	$(0 \pm 2\text{ mm})$	
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< Naso Labial					

BOLTON ANALYSIS

Overall Ratio (X)

Overall ratio (X) = $\frac{\text{sum of Mandibular 12}}{\text{sum of Maxillary 12}} \times 100$ (normal= 91.3)

= _____ x 100 = _____

If X > 91.3

Desired Sum of Mandibular 12 = $\frac{\text{Actual sum of max. 12} \times 91.3}{100}$ = _____

Amount of overall excessive Mandibular Tooth Material:

Actual Sum of Mandibular 12 – Desired sum of Mandibular 12 = _____

If X < 91.3

Desired Sum of Maxillary 12 = $\frac{\text{Actual sum of man. 12} \times 100}{91.3}$ = _____

Amount of overall excessive Maxillary Tooth Material:

Actual Sum of Maxillary 12 – Desired sum of Maxillary 12 = _____

Anterior Ratio (Y)

Anterior ratio (Y) = $\frac{\text{sum of Mandibular 6}}{\text{sum of Maxillary 6}} \times 100$ (normal= 77.2)

= _____ x 100= _____

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Desired Sum of Mandibular 6 = $\frac{\text{Actual sum of max. 6} \times 77.2}{100}$ = _____

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Amount of overall excessive Maxillary Tooth Material:

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CAST ANALYSIS

Casts Apart

MANDIBULAR ARCH			
Arch Shape		Proclined	
Symmetry		Retroclined	
Torus Mandibularis		Diastema	
Labial Frenum		Torsiversion	
Midline		Labio/Buccoversion	
Teeth Present		Lingo version	
Teeth Missing		Supraversion	
Supernumeraries		Infraversion	
Retained Teeth		Curve of Spee Rt	
Crowding		Curve of Spee Lt	

MAXILLARY ARCH			
Arch Shape		Proclined	
Symmetry		Retroclined	
Torus Palatinus		Diastema	
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Midline		Labio/Buccoversion	
Teeth Present		Lingoversion	
Teeth Missing		Supraversion	
Supernumeraries		Infraversion	
Retained Teeth		Crowding	

Casts in Occlusion

RIGHT			LEFT	
Molar Relation			Molar Relation	
Cuspid Relation			Cuspid Relation	

Incisor Relation		Over Jet	
Cross-bite		Over Bite	

Department Of Orthodontics

Required Instruments For Filling

Examination Instruments:

1. Mouth Mirror
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For Lateral Ceph:

1. Tracing Sheets
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For Cast Analysis:

1. Divider
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For Wire Works:

1. Adam Plier
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0.5 / 0.7 Mm Wire

CAST ANALYSIS
Casts Apart

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BOLTON ANALYSIS

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2	1	1	2
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 on cast = mm.

X = Estimated sum of

5	4	3
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Amount of overall excessive Mandibular Tooth Material:

Actual Sum of Mandibular 12 – Desired sum of Mandibular 12 = _____

If X < 91.3

Desired Sum of Maxillary12 = $\frac{\text{Actual sum of man. 12} \times 100}{91.3}$ = _____

Amount of overall excessive Maxillary Tooth Material:

Actual Sum of Maxillary 12 – Desired sum of Maxillary 12 = _____

Anterior Ratio (Y)

Anterior ratio (Y) = $\frac{\text{sum of Mandibular 6}}{\text{sum of Maxillary 6}} \times 100$ (normal= 77.2)

= _____ x 100= _____

If Y > 77.2

Desired Sum of Mandibular 6 = $\frac{\text{Actual sum of max. 6} \times 77.2}{100}$ = _____

Amount of overall excessive Mandibular Tooth Material:

Actual Sum of Mandibular 6 – Desired sum of Mandibular 6 = _____

If Y < 77.2

Desired Sum of Maxillary 6= $\frac{\text{Actual sum of man. 6} \times 100}{77.2}$ = _____

Amount of overall excessive Maxillary Tooth Material:

Actual Sum of Maxillary 6 – Desired sum of Maxillary 6 = _____

COMPOSITE LATERAL CEPHALOMETRIC ANALYSIS

SKELETAL ANALYSIS					
Sagittal Analysis			Vertical Analysis		
< SNA	(80 - 84 °)		< SN - Mandibular Plane	(32° ± 4°)	
< SNB	(78 - 82 °)		< SN - Palatal Plane	(6° ± 4°)	
< ANB	(0° - 4°)		< SN - Occlusal Line	(17° ± 4°)	
< Facial Angle	(81° ± 4)		< MMA	(25° ± 4°)	
AO-BO Distance	F=0 mm M=-1mm		< Upper Occlusal	(11° ± 4°)	
Anterior Cranial Base Length	X		< Lower Occlusal	(14° ± 4°)	
Mandibular Corpus Length	(X + 7)		< Y axis (with SN)	(66° ± 4°)	
Co – A Point			Sum of Posterior Angles Saddle + Articular + Gonial + +	(396° ± 4)	
Co – Gn			Posterior Face Height : Anterior Face Height	(65% ± 4)	
MMD			Lower Ant. Face Height : Total Ant. Face Height	(54% ± 4)	

DENTAL ANALYSIS					
< UI - SN	(102° ± 5)		< UI – NA	(22°)	
< UI - Palatal	(108° ± 5)		< LI – NB	(25°)	
< IMPA	(90° ± 5)		UI – NA Distance	(4mm)	
< IIA	(135° ± 5)		LI – NB Distance	(4mm)	
LI – A-Pog Line	(3mm)		Hold away Ratio LI - NB : Pog - NB	1 : 1	

SOFT TISSUE ANALYSIS					
Upper Lip to E line	(-3±2mm)		Upper Lip to S line	(0±2mm)	
Lower Lip to E line	(-2±2mm)		Lower Lip to S line	(0±2mm)	
< Naso Labial					

Department Of Orthodontics
Required Instruments For Filling

Examination Instruments:

- 1. Mouth Mirror
- 2. Probe (Bault & Sickle Shape)
- 3. Tweezer

For Lateral Ceph:

- 1. Tracing Sheets
- 2. Tape
- 3. Geometry Box
- 4. Pointer For Color (Red / Blue / Green / Black)
- 5. Plain White Paper

For Cast Analysis:

- 1. Divider
- 2. Geometry Box
- 3.

For Wire Works :

- 1. Adam Plier
- 2. Round Plier
- 3. Flat Plier
- 4. Heavy Wire Cutter

0.5 / 0.7 Mm Wire

CAST ANALYSIS
Casts Apart

MANDIBULAR ARCH			
Arch Shape		Proclined	
Symmetry		Retroclined	
Torus Mandibularis		Diastema	
Labial Frenum		Torsiversion	
Midline		Labio/Buccoversion	
Teeth Present		Lingo version	
Teeth Missing		Supraversion	
Supernumeraries		Infraversion	
Retained Teeth		Curve of Spee Rt	
Crowding		Curve of Spee Lt	

MAXILLARY ARCH			
Arch Shape		Proclined	
Symmetry		Retroclined	
Torus Palatinus		Diastema	
Labial Frenum		Torsiversion	
Midline		Labio/Buccoversion	
Teeth Present		Lingoversion	
Teeth Missing		Supraversion	
Supernumeraries		Infraversion	
Retained Teeth		Crowding	

Casts in Occlusion

RIGHT		LEFT	
Molar Relation		Molar Relation	
Cuspid Relation		Cuspid Relation	

Incisor Relation		Over Jet	
Cross-bite		Over Bite	