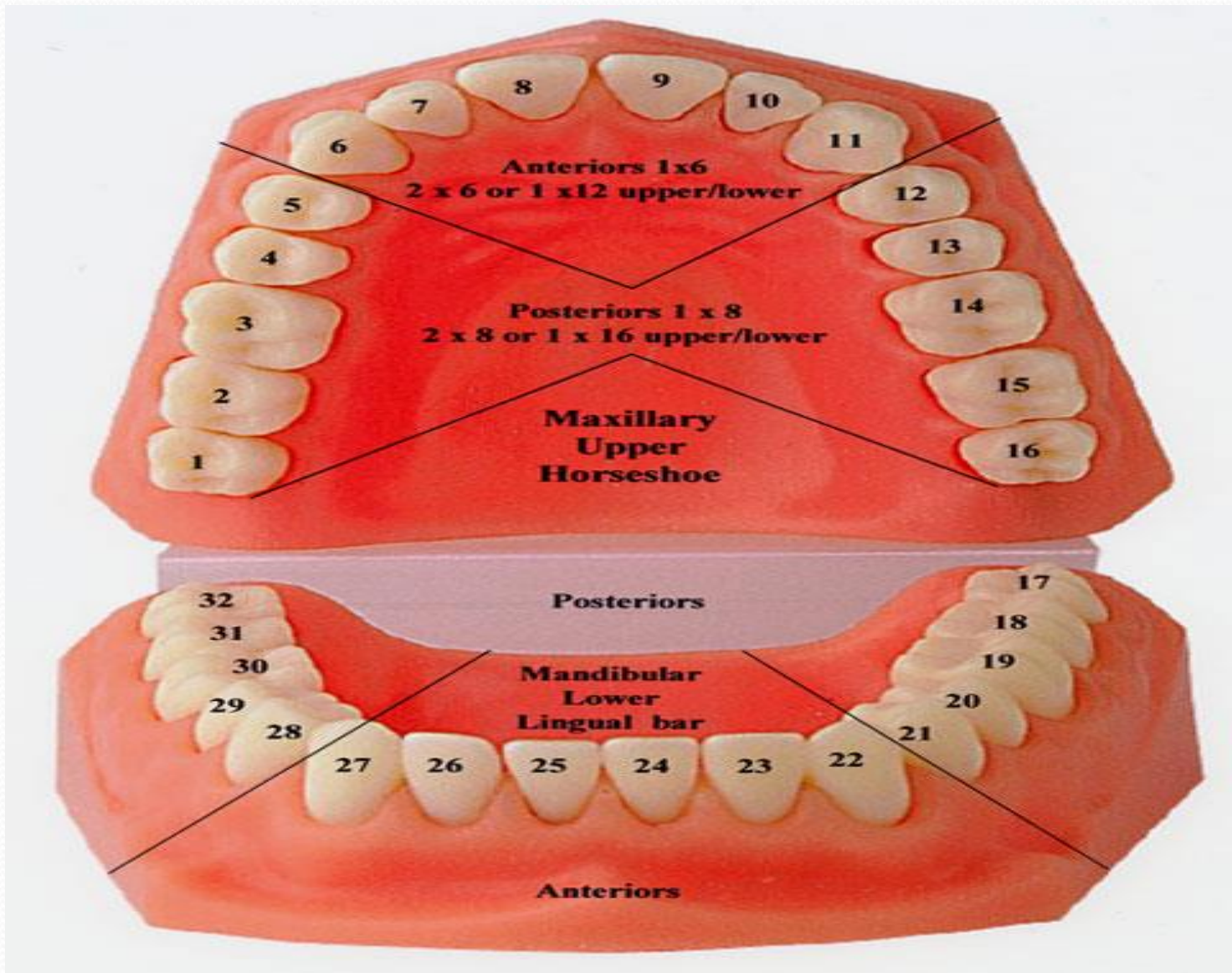


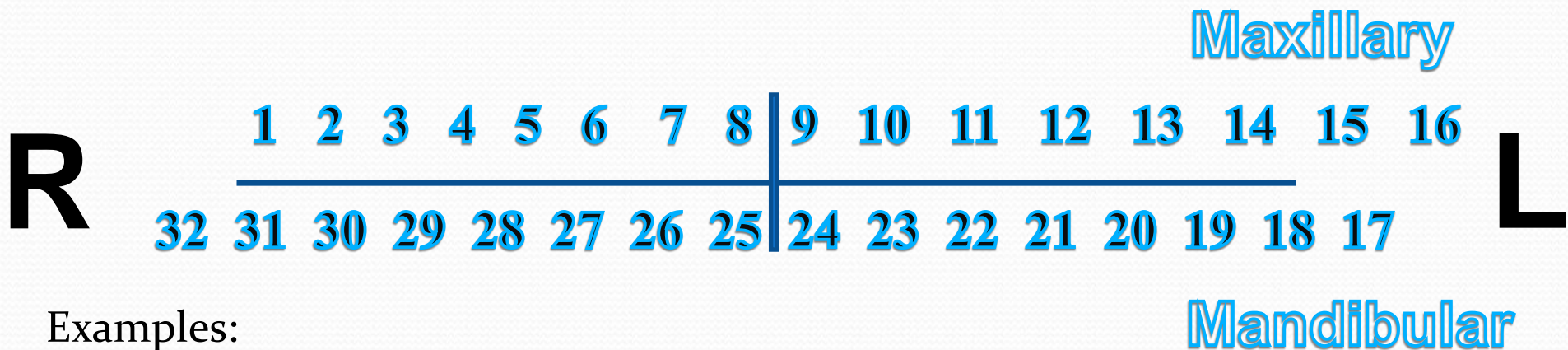
# Tooth numbering systems

1. Universal notation system
2. Zsigmondy/Palmer (or tow-digit ) notation system
3. Fédération Dentaire Internationale “FDI” notation system



# 1. Universal notation system

## A. Permanent teeth

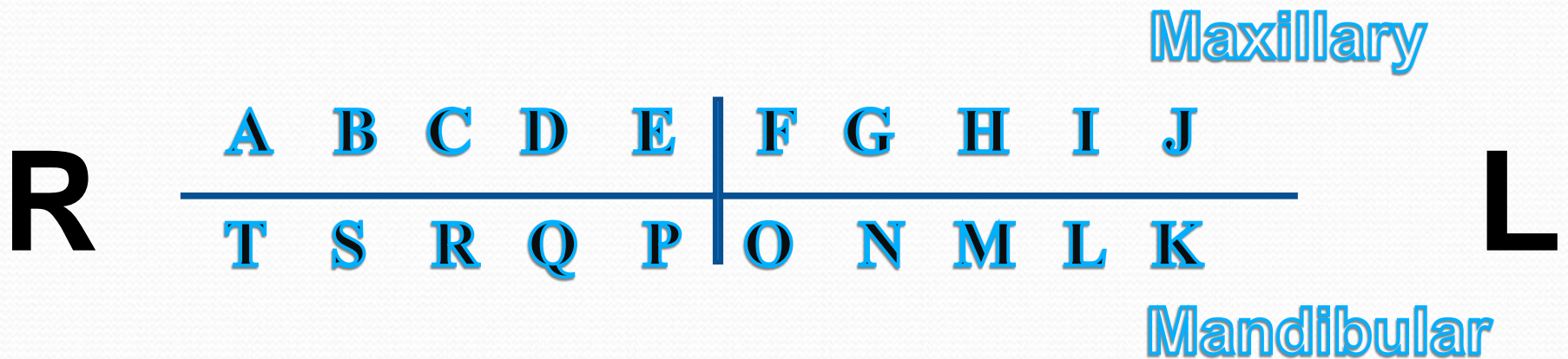


Examples:

- #11: Permanent Maxillary Left Canine
- #29: Permanent Mandibular Right Second Premolar
- #8: Permanent Maxillary Right Central Incisor
- #22: Permanent Mandibular Left Canine
- #28: Permanent Mandibular Right First Premolar

# 1. Universal notation system

## B. Deciduous Teeth



Examples:

#B: Deciduous Maxillary Right first Molar

#O: Deciduous Mandibular Left Central Incisor

#D: Deciduous Maxillary Right Lateral Incisor

## 2. Zsigmondy/Palmer notation system

- It was originally termed the "Zsigmondy system" after the Hungarian dentist Adolf Zsigmondy who developed the idea in 1861, using a *Zsigmondy cross* to record quadrants of tooth positions.
- The Palmer notation consists of a symbol (┘ ┌ └ ┐) designating in which quadrant the tooth is found and a number indicating the position from the midline.
- Adult teeth were numbered 1 to 8, and the child primary dentition were depicted with a quadrant grid using Roman numerals I, II, III, IV, V to number the teeth from the midline distally.
- After that, Palmer changed this to A, B, C, D, E.

# Palmer Notation Method


Upper Right

Upper Left



Lower Right

Lower Left

- 
- There are several systems in use in the world, but only a few are considered.
  - In 1947, a committee of the American Dental Association (ADA) recommended the symbolic (Zsigmondy/Palmer) system as the numbering method of choice.
  - in 1968, the ADA officially recommended the “universal” numbering system, due to difficulties with keyboard notation of the symbolic (Zsigmondy/Palmer) notation system.

# 3. “FDI” notation system

- It is a two-digit system proposed by Fédération Dentaire Internationale (FDI) for both the primary and permanent dentitions. It is also known as ISO 3950 notation system.
- It has been adopted by the World Health Organization “WHO” and accepted by other organizations such International Association for Dental Research.



# 3. “FDI” notation system

## Adult

upper right - 1x

upper left - 2x

18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28

R ----- L

48 47 46 45 44 43 42 41 | 31 32 33 34 35 36 37

lower right - 4x

lower left - 3x

## Deciduous

upper right - 5x

upper left - 6x

55 54 53 52 51 | 61 62 63 64 65

R ----- L

85 84 83 82 81 | 71 72 73 74 75

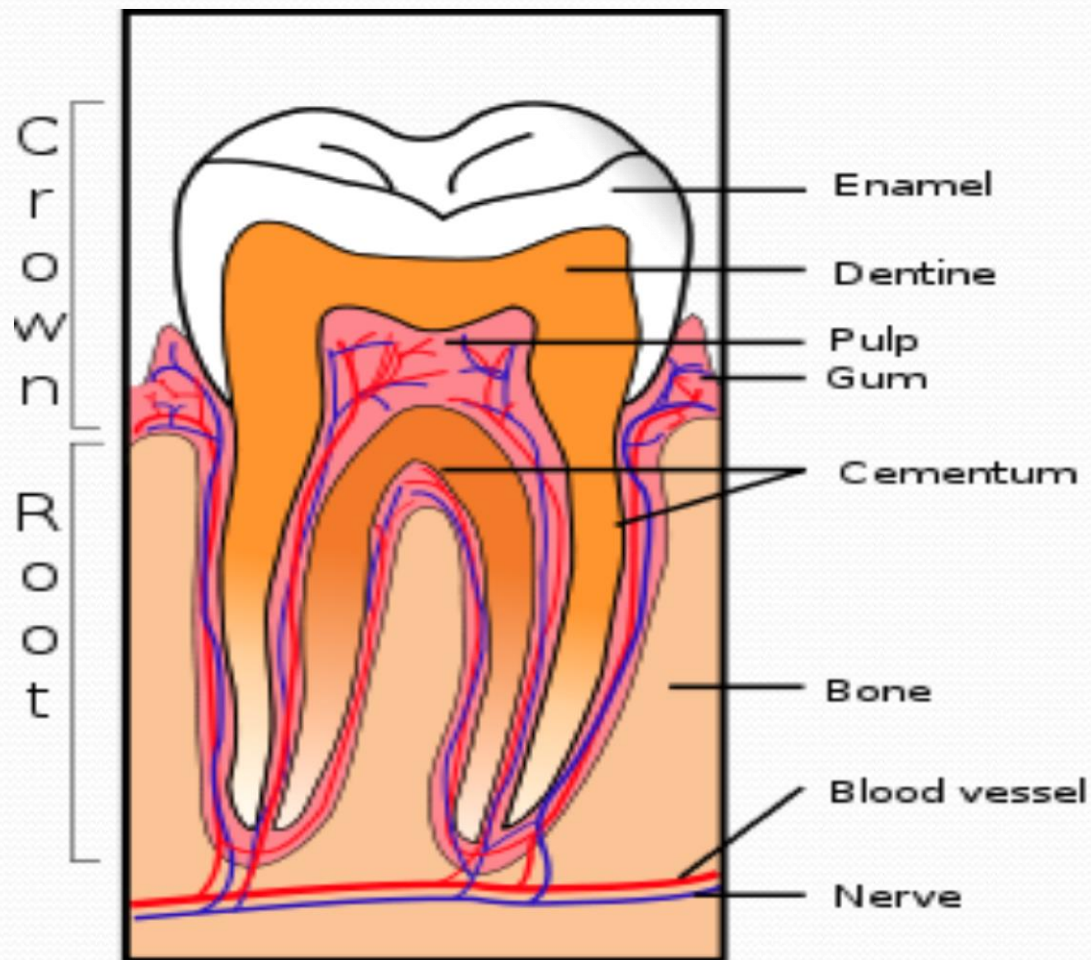
lower right - 8x

lower left - 7x

# 3. FDI notation system

- In this system, the first number represents a tooth's quadrant and the second number represents the number of the tooth from the midline of the face.
- For permanent teeth, the upper right teeth begin with the number, "1". The upper left teeth begin with the number, "2". The lower left teeth begin with the number, "3". The lower right teeth begin with the number, "4".
- For primary teeth, the sequence of numbers goes 5, 6, 7, and 8 for the teeth in the upper right, upper left, lower left, and lower right respectively.
- For example: deciduous molar tooth in the lower right jaw, position 5, would be noted as: **85**.
- Note: Beware of mixing up the teeth on the positions denoted as 11, 12, 13, 14, 15, 16, 17, 18 in the Universal and FDI systems.

# Tooth portions (crown & root)



# Tooth portions (crown & root)

- Each tooth is divided into two parts, **the crown** and the **root**.
- The crown portion of the tooth is covered with enamel and it is defined as the **anatomical crown**, while the root portion is covered by cementum and it is defined as the **anatomical root**.
- **Clinical crown:** is that portion of the tooth that is normally visible in the oral cavity and exposed to the fluids of the mouth.
- **Clinical root:** is that portion of the tooth that is embedded in the periodontal tissues which surround the tooth.
- Both of the 2 portions (**anatomical crown and anatomical root**) join each other at the **cemento-enamel junction “CEJ”** or the **cervical line “cervix”**.

# Tooth portions (crown & root)

- The **enamel, cementum and dentine** are the three hard tissues of the tooth, and the dentine forms the major bulk of the tooth structure. While, the fourth tissue of the tooth is the **pulp** which is the soft tissue, within the dentin providing blood supply, innervation and connective tissue. The primary function of the pulp is to produce dentin.
- The **pulp** consists of two parts, the **pulp chamber** and the **pulp canal**. The **pulp chamber** is that part of the dental pulp inside the crown, while the **pulp canal** is inside the root.

# The number of roots

- single root as in all anterior teeth, mandibular premolars and maxillary second premolars.
- two roots with bifurcation which is the division of the root trunk into two branches as in mandibular molars and maxillary first premolars.
- three roots with trifurcation which is the division of the root trunk into three branches as in maxillary molars.
- Root Trunk is the base of the root of a multirooted tooth.
- Terminal Roots is the roots branching from a root trunk.
- Apex is the terminal end or tip of the root.

# Surfaces of the teeth



# Surfaces of the teeth

- The crowns of incisors and canines have 4 surfaces and a ridge and the crowns of premolars and molars have 5 surfaces.
- 1.Labial surface: is the surface which is towards the lip in incisors and canines (=in anterior teeth).
- 2.Buccal surface: is the surface which is towards the cheek in premolars and molars (=in posterior teeth).
- The labial and buccal surfaces could be termed as the “ Facial surfaces “.



# Surfaces of the teeth

- 3. Lingual surface: is the surface which is facing the tongue (all teeth).
- 4. Occlusal surface: is the surface of posterior teeth coming in contact with the teeth in the opposite jaw during closing the mouth. In anterior teeth this surface is called “ Incisal ridge”.

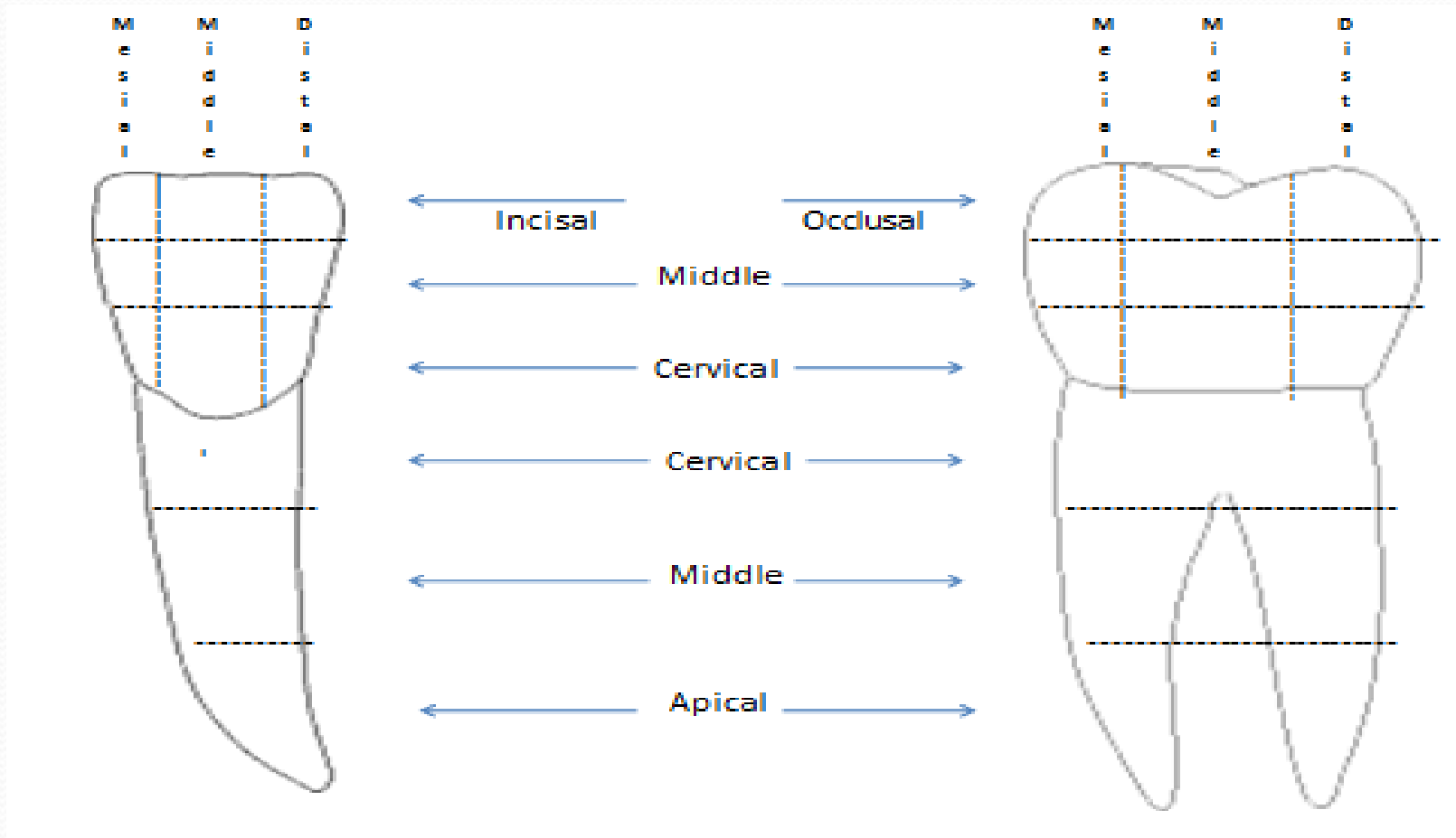
# Surfaces of the teeth

- 5. Proximal surface: is the surface of the tooth facing towards adjacent teeth in the same dental arch.
- A. Mesial surface: is the surface which is facing towards the median line.
- B. Distal surface: is the surface which is facing away from the median line.
  
- All teeth have their mesial surfaces touching the distal surfaces of the adjacent tooth except the maxillary and mandibular central incisors (both permanent and deciduous).

# Division of the crown into thirds, line angles and point angles

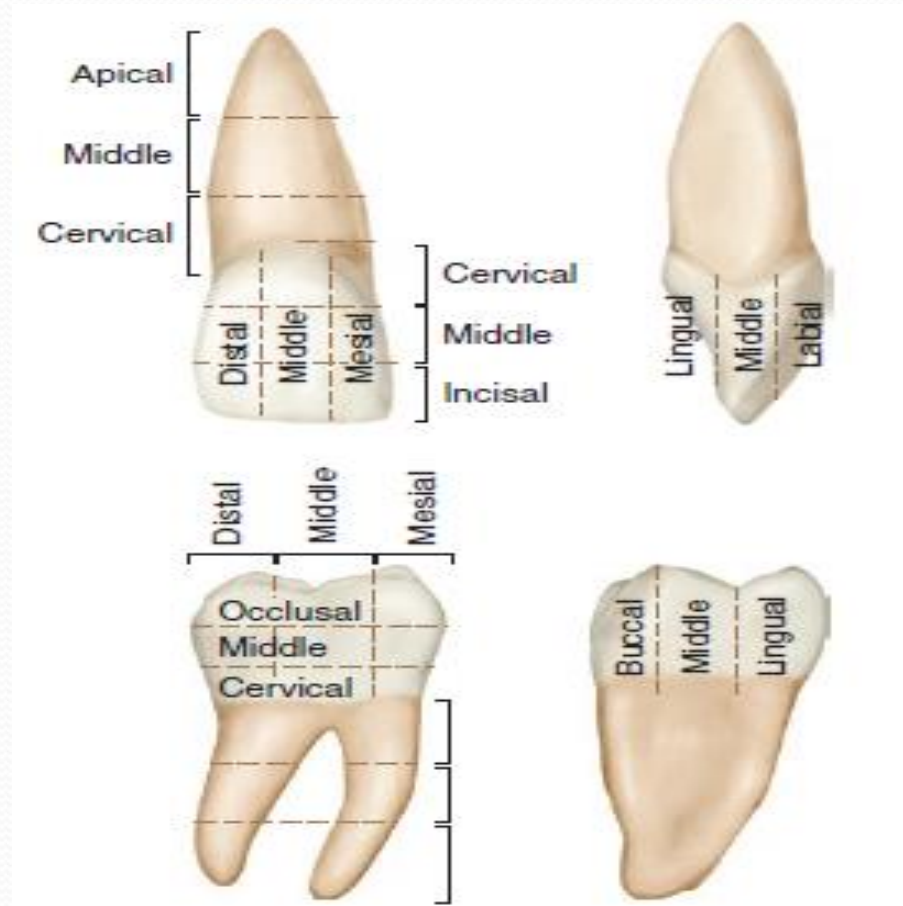
- Actually, there are no plane surfaces or angles or points on the teeth anywhere, except those that appear from wear (e.g., **attrition, abrasion**) or from accidental fracture. So, they are used only as descriptive terms to indicate a location.

# Division of the crown into thirds



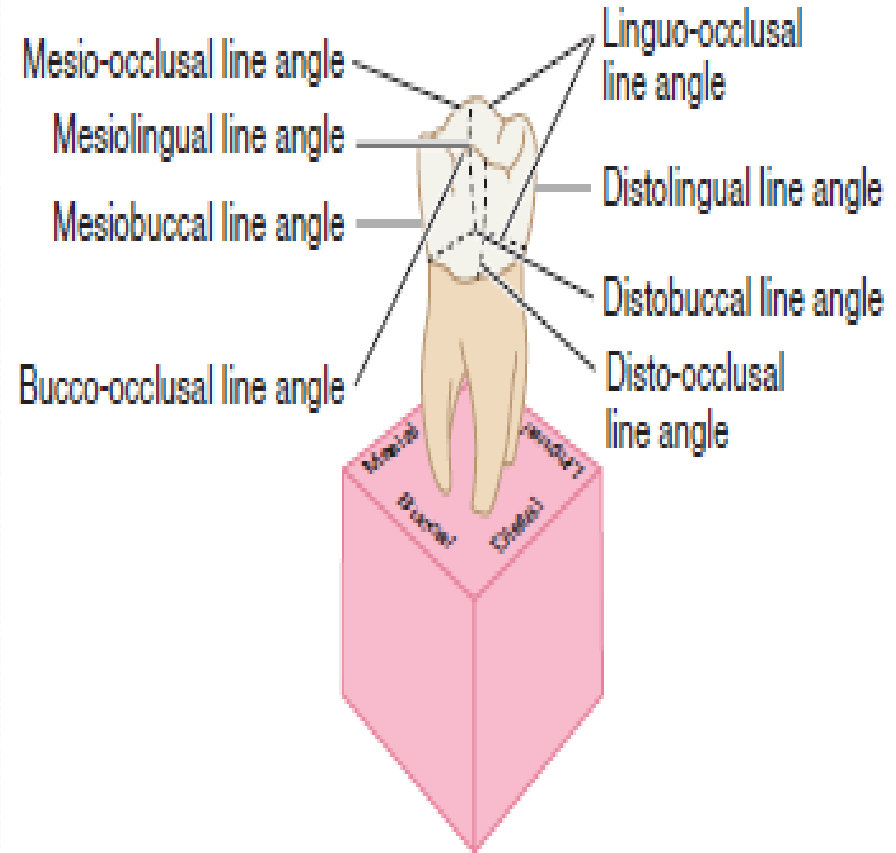
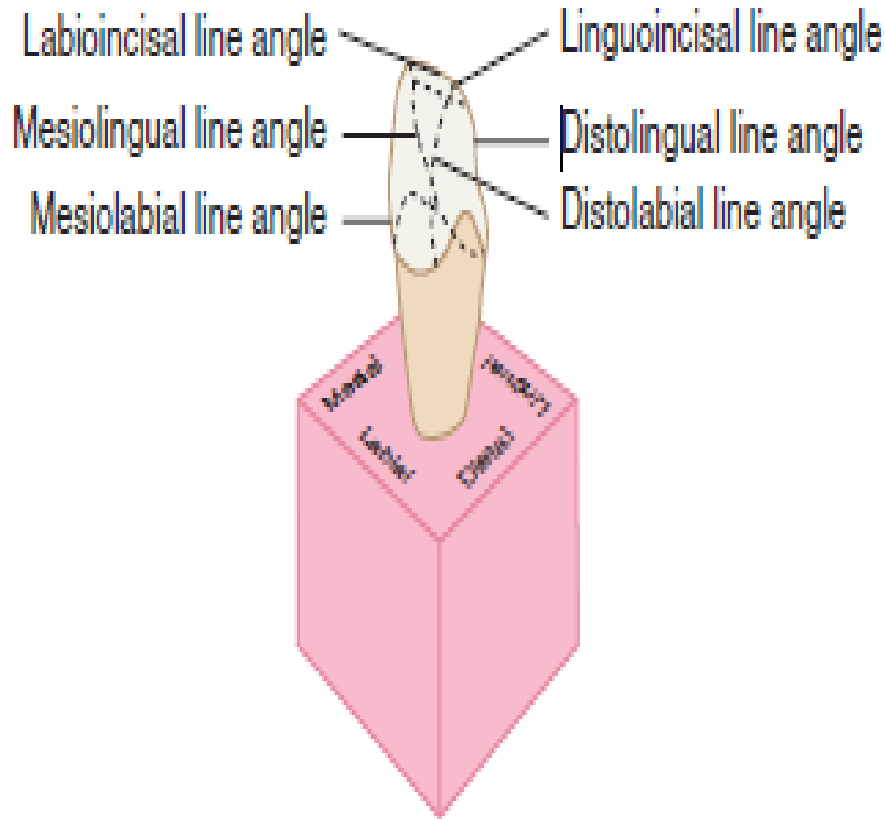
- So, for description, the **crown** and the **root** are divided into **thirds** according to the position of the surface.

# Division of the crown into thirds



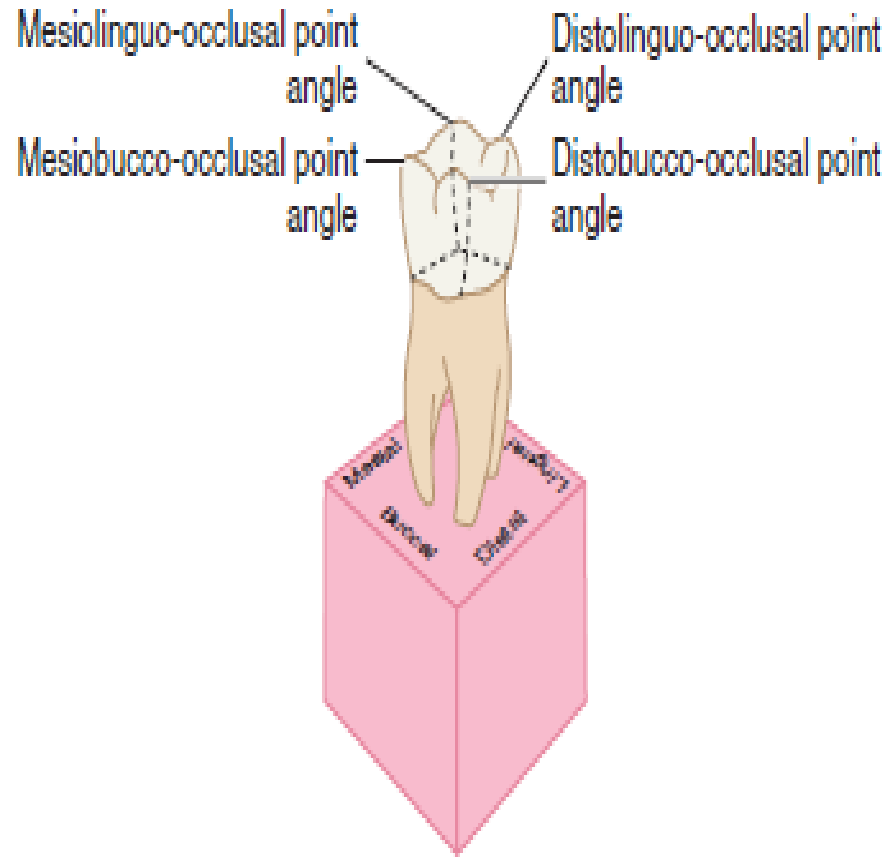
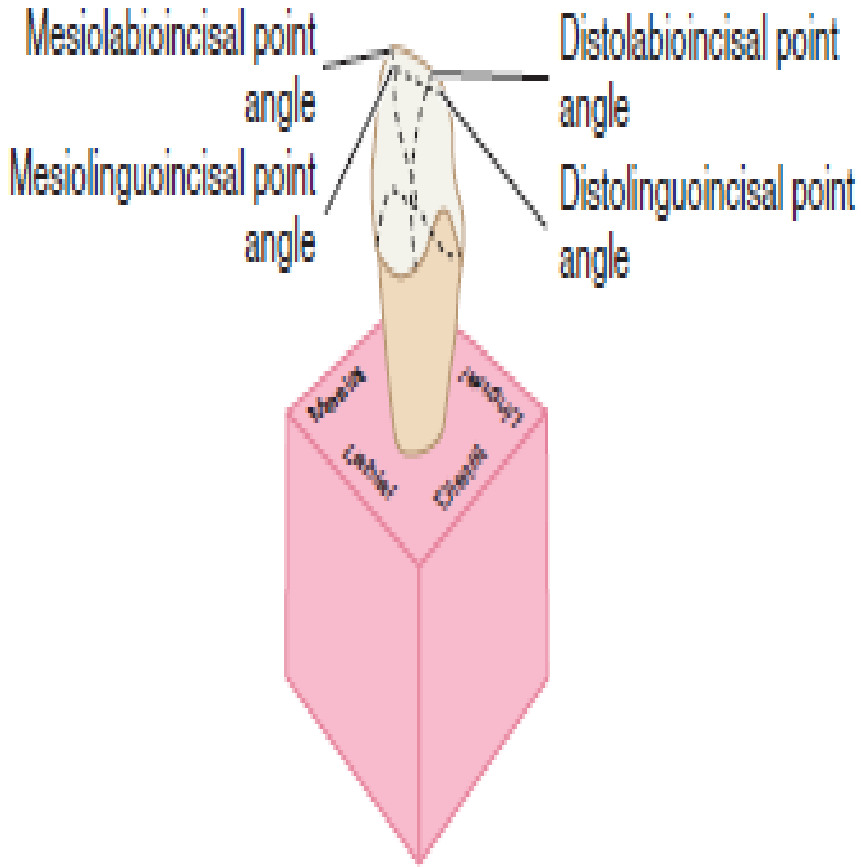
- So, for description, the **crown** and the **root** are divided into **thirds** according to the position of the surface.

# Division of the crown into line angles



- **Line angle:** it is formed by the junction of two surfaces and gets its name from these surfaces. For example, mesio-labial line angle.

# Division of the crown into point angles



- **Point angle:** it is formed by the junction of three surfaces and gets its name from these surfaces. For example, mesio-linguo-Incisal point angle.