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Indian Grammatical Tradition: Paṇinian Linguistics
Module No. 16 -17[1]
Morphology: Inflectional and Declensional suffixes

1.1.   The 3^{rd,} 4th and 5th adhyāyas of the Aṣṭādhyāyī contain affixes. Five types of auffixes are there: (1) sUP, (2) tiṄ, (3) strīpratyaya, (4) kṛt and (5) taddhita. Pratyāhāras 'sUP' and 'tiṄ' denote inflectional suffixes. 'sUP' suffixes are declensional suffixes and 'tiṄ' suffixes are conjugational suffixes. Suffixes termed strīpratyaya are feminine formation suffixes.) kṛt and taddhita suffixes are derivational or word formation suffixes. kṛt suffixes are also called primary derivational suffixes and taddhita suffixes are called secondary derivational suffixes. In the following modules, we shall discuss inflectional, derivational and feminine formation suffixes.

2.1 We shall first discuss the 'sUP' suffixes. As it was explained in previous modules that the pratyāhāra 'sUP' denotes all the nominal declensional endings of Sanskrit, Note that, when a nominal stem or base is used in a sentence, it has to compulsorily take a case suffix, so that it becomes a fully formed word to be used in a sentence. Pāṇini defines a pasa as 'suptiṅantaṃ padam (1.4.14)' "That which ends in 'sUP' or 'tiṄ' is a pada". A pada should be sued in a sentence is also supported by the traditional saying: "apadaṁ na prayuñjīta (a non-word (apada) should not be used)". It may be noted that a case form in Sanskrit simultaneously denotes the

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numbers: singular, dual, and plural and three genders: masculine (pulliṅga), feminine (strīliṅga) and neuter (napuṁsakaliṅga). The genders are natural, for example- animals and people are normally masculine or feminine as per their sex, but most of the words just belonging to a particular gender on the basis of their endings or on a rather arbitrary basis. Note that words in Sanskrit must be learned with their proper gender. The chart below gives 'sUP' suffixes:

Case /Number	Singular	Dual	Plural
Nominative/Vocative	sU	au	Jas
Accusative	am	auṬ	Śas
Instrumantal	Ṭā	bhyām	bhis
Detive	Ṅe	bhyām	bhyas
Ablative	Ṅasi	bhyām	bhyas
Genitive	Ṅas	os	ām
locative	Ṅi	os	suP

Note that the 'sUP' suffixes are divided into seven groups which stand for seven cases respectively. Each group has three numbers: singular (ekavacana), dual (dvivacana) and plural (bahuvacana). These 'sUP' suffixes are listed in the sūtra: "svaujas-amauṭchaṣ-ṭābhyāṃbhis-ṅebhyāṃbhyas-ṅasibhyāṃbhas-ṅasosām-ṅyossup (4.1.2)." This sūtra states that the affixes su au Jaś am auṬ Śas Ṭā bhyām bhis Ṅe bhyām bhyas Ṅasi bhyām bhyas Ṅas os ām Ṅi os and suP are introduced after expressions ending in feminine suffixes Ṅī, āp and a prātipadika (a nominal stem or base). These twenty-one suffixes are the declensional endings of Sanskrit divided into seven triplets. These suffixes denoted by 'sUP' are taken one by one have the ekavacana (singular), dvivacana (dual) and bahuvacana (plural) to denote them respectively. These numbers are assigned to 'sUP' triplets by sūtra "tānyekavacanadvivacanabahuvacanānyekaśaḥ (1.4.102) and supaḥ (1.4.103). These sūtras state that the suffixes denoted by the pratyāhāra 'sUP' taken one-by-one have the the ekavacana (singular), dvivacana (dual) and bahuvacana (plural) respectively. Further the sūtra 'vibhaktiśca (1.4.104) states that each set of three triplets has a vibhakti (case ending) to denote it. The seven vibhaktis are traditionally distinguished by the first seven ordinal numbers in Sanskrit. These vibhaktis are listed below with their Sanskrit name along with their corresponding names in English with their some main functions.

1. prathamā vibhakti (first), Nominative, naming, subject, object or direct object case.
2. dvitīyā vibhakti (second) Accusative, direct object case.
3. tṛtīyā vibhakti (third) Instrumental, agentive or subject case.
4. caturthī vibhakti (fourth) dative, indirect object.
5. pañcamī vibhakti (fifth) ablative, source case.
6. ṣaṣṭhī vibhakti (sixth) genitive, possessive/partative case
7. saptamī vibhakti (seventh) locative, location case.

Vocative case takes the prathamā vibhakti. The following sentence demonstrates the use of these seven cases. The example is taken from Devavāṇī Praveṣikā pg-56. The number after the words denotes the case.

Daśarathasya(6) vacanaṃ(2) śrutvā nagarān(5) niḥsṛtya lakṣamaṇena(3) sahehāgatya dharmāya(4) vane(7) vasati rāmaḥ(1).

Having heard Daśaratha's(6) word(2) and having come out from the city(5) and having come here with Lakṣamana(3), Rāma(1) lives in the forest(7) for the sake of dharma (righteousness).

2.2   'sUP' suffixes are added to the prātipadika 'nominal stem'. The following two sūtras define the term prātipadika: arthavadadhāturapratyayaḥ prātipadikam (1.2.45). The sūtra states that a prātipadika is one that is meaningful but is not a root, a suffix nor one that ends in a suffix. The next sūtra which defines the prātipadika is: 'kṛttaddita samāsāśca' (1.2.46). The sūtra states states that a primary derivative, a secondary derivative and a compound is also a 'prātipadika'. Note a 'prātipadika' is eligible to take a feminine suffix, a taddhit suffix and a case suffix.

3.1 Let us now examine these 21 case suffixes along with their substitutes. Addition of these suffixes will be explained with examples following the derivational methodology of Pāṇini.

3.2 First case singular suffix 'sU' : 'U' of suffix 'sU' is termed as 'it' by 1.3.2 and what is termed as 'it' is dropped by 1.3.9. So what is remaining of suffix 'sU' is 's'. Suffix 's' occurs after different types of nominal stems. For example - rāma+'sU'. 'U' is dropped. rāma + s → s→ 'rU' by 8.2.66. 'U' of 'rU' is dropped. rāma + r → r → visarga (ḥ) by 8.3.15. We get the nominative singular form of 'prātipadika' rāma - rāmaḥ. Nominative singular of nouns ending in short 'a' like 'deva' 'nara' 'kṛṣṇa' etc will be derived just like rāma. Similarly 'pati +'sU' → pati + s → pati +rU → pati + r → pati +ḥ = patiḥ (lord). 'vāyu' + 'sU'→ vāyu + 's' →'vāyu' + 'rU'→ 'vāyu' + 'r' → 'vāyu' + 'ḥ' →'vāyuḥ' (wind) etc. Note that the 's' of suffix 'sU' undergoes morphophonemic changes like any word final 's'.
The suffix 'sU' has three substitutes (1) deletion i.e. substitution by φ (zero) (2) –'am' (3) -adḌ. Let us now examine the case of these three substitutes:

3.4 Deletion of 'sU' takes place after a nominal stem ending in (1) a consonant. For example- 'marut' + 'sU' →   'marut' + 's → 'marut' + φ → 'marut' (wind) (2) or in feminine suffixes- 'Ṅī' and 'āp'. For example- 'gaurī' + 'sU' → 'gaurī' + 's' → 'gaurī' + φ → 'gaurī' (name), ramā + 'sU' → ramā + 's' → ramā + φ → ramā. In these cases, 'sU' (s) is dropped by the sūtra "halṅyābbhyo dīrghāt sutisyapṛktaṃ hal (6.1.88)". the sūtra states that the nominative or first singular suffix 'sU' is dropped after a stem ending in pratyāhāra 'haL' (all consonants) or the long vowel of feminine suffix 'Ṅī' and 'āp' and the consonant 't' of ' of 'tiP' and 's' of 'siP' when the vowel in these suffixes is lost', (3) after a neuter stem ending in any sound other than 'a'. For example- 'dadhi' + 'sU' →dadhi +φ → dadhi (curd) by "svamornapuṃsakāt (7.1.23)". The sūtra states that "after a neuter stem, first singular 'sU' and second singular suffix 'am' are dropped. (4) after the stem adas (- that) . Here the stem final 's' of 'adas' is replaced by 'au' by the same sūtra which deletes 'sU' "adasa au sulopaḥ (7.2.107)". 'd' of ada(s) is replaced by 's' by "tadoḥ saḥ sāvanantayoḥ (7.2.106)". we get from 'asau' – 'that man or woman'.

3.5 'sU' is replaced by '-am' (1) after a neuter stem ending in 'a'. For example – jñāna + 'sU'. 'sU' is replaced by am by "atom (7.1.24)". The sūtra states that '-am' is the substitute in place of 'sU' of first case singular am '-am' of the second case singular. jñāna + am → jñānam pūrvarūpa (preceding vowel is the single substitute for a+a) for a+a by "ami pūrvaḥ (6.1.107)". (2) 'sU' is replaced by ami after pronominals yuṣmad and asmad by "ṅeprathamayoram (7.1.28)". The sūtra states that '–am' replaces 4th case singular suffix 'Ṅe' and the suffixes of the first and second cases (nominative and accusative cases) after pronominals yuṣmad (you) and asmad (we), yuṣmad + 'sU' , asmad +'sU'. 'sU' is replaced by 'am' by the present sūtra. yuṣmad + 'am' , asmad + am. Now yuṣm and asm are replaced by tva and aha respectively by "tvāhau

sau (7.2.94)". The sūtra states that the part upto –m of yuṣmad and asmad – is replaced by 'tva' and 'aha' respectively before 'sU'. Now pūrvarūpa single substitute for 'a' of 'tva' and 'a' of 'ad' and 'a' of 'aha' and 'a' of 'ad' by 'atoguṇe (6.1.97)' tvad + am, ahad+am. Now 'd' of tvad and ahad is dropped by Śeṣe lopaḥ (7.2.90). Now we have 'tva+am' , 'aha+am'. pūrvarūpa single substitute for a +a of tva +am and aha +am by 6.1.107, we get the forms tvam (you) and aham (I).

3.6 substitute adḌ replaces 'sU' and second singular –'am' after ḍatara etc five neuter pronominal stems by "adḍḍatarādibhyaḥ pañcabhyaḥ (7.1.25)". for example- katara + 'sU'. Suffix 'sU' is replaced by adḌ → katara + adḌ. Ḍ is dropped. katara + ad. Now 'a' of katara is dropped by 'ṭeḥ (6.4.143)'. The sūtra states that the zero (ϕ) replaces the first syllable before an affix with marker Ḍ as 'it'. Katar +ad → katarad. Finally 'd' is optionally changed to 't' by "vāvasāne (8.4.56)" . we get the forms katarad/katarat (of which).

3.7 Note that the first case (nominative) forms are all used as forms of vocative. No change takes place in dual and plural forms when they are used as vocatives. A word in vocative case is termed as 'āmantrita' by 'sāmantritam (2.3.48)". The sūtra states that 'āmantrita' denotes the first case suffixes used in addressing (vocative). A word which is termed as 'āmantrita' has the acute accent. So the vocative will have the acute accent. The changes that take place in vocative singular are:
(1) the consonant of the vocative singular i.e. the 's' of 'sU' and 'm' of '–am' are deleted after a stem ending in short vowel or in pratyāhāra 'e-Ṅ' (e or o) by "eṅhrasvāt sambuddheḥ (6.1.69)". The sūtra states that a consonant of the vocative singular is dropped when a stem ends in a short vowel or in pratyāhāra 'e-Ṅ'. For example- he rāma + 'sU' → he rāma + 's' → rāma + ϕ → he rāma (o Rāma), he jñāna + 'sU' → he jñāna +am, sU is replaced by –am by 7.1.24, he jñāna +am → he jñāna (o knowledge). 'm' is dropped by 6.1.69.
(2) The final vowel of nominal stems of 'ambā', 'akkā' 'allā and the stems of the technical class called 'nadī' is shortened before vocative singular by "ambārthanadyohrasvaḥ (7.3.107)". he ambā + 'sU' → he amba + 's' → he amba (o mother). 's' is dropped by 6.1.69. Similarly, he akka, he alla (o mother).
(3) the short vowel at the end of a stem is replaced by guṇa before a vocative singular by 'hrasvasya guṇaḥ (7.3.108). The sūtra states that 'guṇa' is the substitute in place of a short vowel before vocative singular. he hari + 'sU'. Guṇa for 'i' of hari by the present sūtra. he hare + 's' → he hare (o Hari). 's' is dropped by 6.1.69.

4.1 First and second dual ending 'au' and 'auṬ', Pāṇini treats these two suffixes together as they have the same substitutes. The 'Ṭ' of the second case dual suffix is 'it', hence dropped. So what remains is '–au'. Examples, 'rāma' + 'au' /'rāma' + 'auṬ' → 'rāma' + 'au'. Vṛddhi (-au) is the single substitute in place of 'a' of 'rāma and –au by "vṛddhireci (6.1.88)", we get the form 'rāmau' (two Rāmas). nārī + au/auṬ→nārī + au → 'nāry' + 'au'. 'y' substitute in place of 'i' by ikoyaṇaci (6.1.77). 'nāry' + 'au' →'nāryau' (two women).

4.2 The substitute for '–au' are (1) Śi , (2) '–am' (only after two stem, (3) '-ū' (only after one stem) and (4) single substitute by the long form of the preceding vowel.

4.3 Substitute 'Śi' takes place (1) after a stem ending in the feminine '-āp' by "auṇa āpaḥ (7.1.18)". For example- 'ramā' + 'au'. '–au' is replaced by 'Śi' by the present sūtra. 'ramā' + 'i'. 'Ś' is 'it', hence dropped. ramā + 'i'→ (ā + 'i'= e) guṇa by ād guṇaḥ (6.1.87) → rame (two Ramās). (2) after a neuter stem → for example, - jñāna + au → jñāna + Śi by napuṃsakācca (7.1.18) → jñāna + 'i' (Ś is 'it' hence dropped). Single substitute guṇa for a+ i = e by 6.1.87. we get the form jñāne (two jñānas).

4.4 '-am' is the substitute in place of suffix '-au'/ 'auṬ' after pronominals '-yusmad' and '-asamad'.   '-yuṣmad' +'-au'/ 'auṬ', '-asmad' + '-au'/ 'auṬ'. '-au'/ 'auṬ' are replaced by '-am' by "ṅeprathamayoram (7.1.28)". 'yuṣmad' + 'am', 'asmad' + 'am'. 'yuṣm' and 'asm' are replaced by 'yuva' and 'ava' by "yuvāvau dvivacane (7.2.92)". The sūtra states that 'yuva' and 'ava' replace yuṣm and asm of the pronominal stems yuṣmad and asmad before a dual suffix 'yuva-ad +am, āva-ad + am. pūrvarūpa 'single substitute for 'a+a → a' by atoguṇe 6.1.97'. 'yuvad +am, āvad + am. Now '-d' is replaced by 'ā' by 'dvitīyāyām ca (7.2.87)'. The sūtra states that before the second case suffixes, the '-d' of yuṣmad and asmad is replaced by 'ā'. Before the first dual also '-d' of yuṣmad and asmad is replaced by "prathamāyāśca dvivacane bhāṣāyām (7.2.88). 'yuvaā' + 'am', 'āvaā' + 'am', Dīrgha 'lengthening' of 'ā' + 'a' by 'akaḥ savarṇe dīrghaḥ' (6.1.101), we get the forms 'yuvām' (you two) and 'āvām' (we two).

4.5 ū is the substitute for 'au'/ 'auṬ' after the pronominal stem 'adas' (that) in all the three genders. For example- the derivation of the masculine form 'amū' (those two) is as follows: 'adas' + 'au'/'auṬ' → 'adaa' + 'au'. 's' of 'adas' is replaced by 'a' by "tyadādīnāmaḥ (7.2.102)". The sūtra states that the final sound of the stems of 'tyad' class of pronominals is replaced by 'a' before a case suffix, 'adaa' + 'au'. 'pūrvarūpa' for 'a' + 'a'= 'a'by 'atoguṇe' (6.1.97). 'ada' + 'au' → single substitute 'vṛddhi' -au for 'a' + 'au' by 'vṛddhireci' (6.1.88) → 'adau'. Now sūtra "adaso'serdādudomaḥ" (8.2.80) applies. So we get amū. The present sūtra states that thw vowel after 'd' of the stem 'adas' is substituted by 'u' (short or long as per the underlying vowel) and also 'd' of 'adas' is changed into 'm'.

4.6 Single substitute for suffixes 'au'/ 'auṬ' and for the stem final short 'i' or 'u' is the corresponding long vowel of the preceding by "prathamayoḥ pūrvasavarṇaḥ (6.1.102). for example- kavi + au → kavī (two poets), prabhu + au → prabhū (two lords).

5.1 The first case plural suffix 'Jas'. Examples- rāma + Jas → rāma + as (J is 'it' , hence dropped). Dīrgha, lengthening of 'a' + 'a' by "prathamayoḥ pūrvasavarṇaḥ (6.1.102)" → rāmās → 's' is replaced by 'rU' by "sasajuṣo ruḥ (8.2.66) → rāmār ('U' is 'it' hence dropped) → rāmāḥ (many Rāmas). Visarga is the substitute in place of 'r' by "kharavasānayorvisarjanīyaḥ (8.3.15)" → rāmāḥ. rājan + Jas → rājan + as → rājāns. 'a' before 'n' is lengthened by "sarvanāmasthāne cāsambuddhau (6.4.8)" the sūtra states that the vowel which precedes the final 'n' is lengthened before a sarvanāmasthāna other than vocative singular. rājāns → rājānrU→ rājānr → rājānaḥ (kings).

5.2 Suffix 'Jas' has five substitutes: (1) 'Śī' (2) 'Śi'(3) 'auś' (4) LUK (φ. zero) and (5) 'am'.

5.3 Substitute 'Śī' takes place before a pronominal stem ending in a short ending in a short 'a' by 'jasaḥ śī' (7.1.17). for example- sarva + Jas → sarva +'Śī' →'Śī' is replaced by Jas by the

present sūtra. sarva + 'i' ('Ś' is 'it' hence dropped). Guṇa substitute for a+i=e by ādguṇaḥ (6.1.87). we get the form sarve (all).

5.4 Substitute 'Śi' takes place after a neuter stem by "jaśśoḥ śiḥ (7.1.20)". The sūtra states that "after a neuter stem 'Jas' and 'Śas' are replaced by 'śi'. For example- 'jñāna' +'Jas'/Śas → 'jñāna' + 'śi'. Jas /Śas are replaced by 'Śi' by present sūtra. Jñāna + i. Now āgama 'augment' 'nUM' is added by "napuṃsakasya jhalacaḥ (7.1.72)". The sūtra states that the augment 'nUM' is added to neuter stem ending in pratyāhāra 'JhaL' or a vowel before a sarvanāmasthāna suffix. Jñāna +num + i (u and m are dropped) → jñāna-n + i → jñānāni. 'a' before 'n' is lengthened by 6.4.8. we get the form 'jñānāni' (knowledges).

5.5 Substitute 'auś' occurs after 'aṣṭā'. '-aṣṭā' is a free variant of 'aṣṭan' (eight). 'aṣṭan' +Jas/Śas. Now 'ā' in place of 'n' of 'aṣṭan' by "aṣṭan ā vibhaktau (7.2.84)". The sūtra states that long 'ā' is the substitute in place of 'n' of 'aṣṭan'. 'a' + 'a' → is lengthened. 'aṣṭā' + Jas/ Śas → Jas / Śas are replaced by 'auŚ' by "aṣṭābhya aus (7.1.21). aṣṭā+ auŚ → aṣṭā+ au (' Ś' is 'it' hence dropped). vṛddhi by 6.1.88 . We get the form 'aṣṭau' (eight).

5.6 Substitute LUK (ɸ, zero) takes place after a number stem ending in 'ṣ' or 'n' by "ṣaḍbhyo luk (7.1.22)". The sūtra states that "after a stem of 'ṣaṭ' class 'Jas and Śas are replaced by LUK, i.e . by zero or deleted. For example- pañca + Jas/Śas. Jas and Śas are replaced by zero by the present sūtra. Pañca +ɸ. 'n' is dropped by 'nalopaḥ prātipadikāntasya (8.2.7). we get the form pañca (five).

5.7 Substitute 'am' takes place after pronominal stems yuṣmad, asmad. yuṣmad + Jas, asmad +Jas. Jas is replaced by '–am' by 'ṅe prathamayoram (7.1.28). 'yuṣmad' + 'am', 'asmad' + 'am'. 'yuṣm' and 'asm' are replaced by 'yūya' and 'vaya' respectively by yūyavayan jasi(7.2.93)". The sūtra states that yuṣm and asm are replaced by 'yūya' and 'vaya' respectively before Jas. yūyaad + am, vayaad+ am. Deletion of 'd' by 'śeṣe lopaḥ (7.2.90) pararūpa of a+a → a by 'atoguṇe (6.1.97). yūya +am, vaya +am, a+a=a, pūrvarūpa by ami pūrvaḥ (6.1.107). we get the form yūyam (you, plural), vayam (we).

6.1 second case suffix singular '–am': the suffix '–am' has only two substitutes: (1) LUK (ɸ, zero) and (2) 'adḌ'. LUK takes place after a neuter stem ending in any sound other than 'a' by svamornapuṃsakāt (7.1.23). the sūtra states that LUK (ɸ) is the substitute in place of 'sU' am – 'am' after a neuter stem ending in any sound except stems ending in short vowel 'a'. For example- vāri + sU→ vāri + ɸ (by 7.1.23)→ vāri (water). Similarly vāri + am → vāri + ɸ → vāri (2nd singular).

6.2 'adḌ is the substitute in place of 'sU' and am- 'am' after five pronominal stems beginning with Ḍatara etc by "adḍḍatarādibhyaḥ pañcabhyaḥ (7.1.25)". The five members are ḍatara, ḍatama, itara, anya and anyatara. The first two ḍatara and ḍatama are suffixes associated with pronominal stems. For example, katara (the words ends in Ḍatara) + am→ katara + adḌ by (7.1.25). katara+ ad (Ḍ is deleted) → katara +ad →final 'a' is deleted by 'ṭeḥ' (6.4.143) → katarad→ katarat. Final 'd' is optionally changed to 't' by vāvasāne (8.4.56). we get the forms – katarad/ katarat (which of two).

6.3 If a stem ends in consonant, suffix '-am' is added to the consonant. For example, bhūbhṛt + am → bhūbhṛtam. In case the stem ends in a vowel, normal sandhi rules apply. For example, rāma+am = rāmam (Rama accusative singular). pūrvarūpa sandhi for a+a = a (by ami pūrvaḥ (6.1.107). Similarly nadī + am → nadīm (river), pati+am – patim (husband), vadhū+am = vadhūm (bride) etc.

7.1 Second case plural suffix Śaś : suffix Śaś is found after stems, ending in consonants.For example- marut+ Śaś (Ś is deleted)→ marut +as → marutas→ s=rU, (U is deleted) by 8.2.66. marutar→ marutaḥ. 'r' is replaced by visarga by 8.3.15. we get the form marutaḥ 'winds'. Similarly, bhūbhṛt + Śaś → bhūbhṛtas→ bhūbhṛtar→ bhūbhṛtaḥ.

7.2 Suffix 'Śaś' has four substitutes (1) 'Śi' (2) 'auŚ' (3) LUK (ɸ) and (4) single replacement by the corresponding long vowel of the stem final vowel. Substitute 1,2, and 3 of Śaś behave exactly likethe suffix 'Jas'. See above 5.3 to 5.6.

7.3 Single substitute by the corresponding long vowel of the stem final vowel takes place after a stem ending in 'a' 'u' or 'r'. Here the preceding vowel of the stem and the following vowel 'a' of the Śaś (Ś is dropped) are replaced by the corresponding long vowel of the stem by "prathamayoḥ pūrvasavarṇaḥ (6.1.102) and the 's' of the suffix 'as' (Śaś) is replaced by 'n' when the nominal stem is a masculine by "tasmācchaso naḥ puṃsi (6.1.101)". The sūtra states that " 'n' is the substitute in place of 's' of suffix 'Śaś' after the single substitute long vowelwhich replaces both the stem final 'aK' ('a', 'i', 'u' 'ṛ' 'ḷ') and initial vowel of the suffix Śaś (i.e. 'a'). for example- hari + Śaś → hari + as → harīs. Single long vowel of the preceding vowel is the substitute for the stem final vowel 'i' and vowel 'a' of the suffix Śaś by 6.1.103. We get the form 'harīn (Haries – acc. pl), similarly vāyu + Śaś → vāyu +as →vāyūs → vāyūn (winds). In case of feminine stems, 's' is not replaced by 'n'. For example, dhenu + Śaś → dhenu+as → dhenū+s → dhenūs -→ dhenūr→ dhenūḥ (cows).

7.4 Let us now derive the accusative plural of 'go' (cow). 'go' + Śaś → 'go' + 'as'. Now applies the sūtra 'autoṁ śasoḥ (6.1.93)'. The 'sūtra' states that "the single substitute in place of stem final 'o' plus the vowel of '-am' and '-Śaś' (as) is long 'ā'. 'go' + 'a' → 'gā' + 's' by the present 'sūtra'. ' gā' + 's' → 'gā' + 'rū' → 'gā' + 'r' →gāḥ (oxen). Notice that in this case 's' has not been replaced by 'n' by 6.1.103, as the sūtra 6.1.103 allows the replacement of 's' by 'n' only after single replacement by the long counterpart of the preceding vowel and that is not the case here.

7.5 After pronominals 'yuṣmad and asmad, 'n' is the substitute in place of 'a' off suffix '-Śaś' by "Śaso na 7.1.29". 'yuṣmad' + 'Śas', 'asmad' + 'Śas' → yuṣmad + as, asmad + as. 'ā' is the substitute in the place of 'd' of 'yuṣmad', 'asmad' by "dvitīyāyāṃ ca (7.2.87). The sūtra 'ā' replaces the sound 'yuṣmad' – 'asmad' before second suffix also. 'yuṣmaā' + 'as' , 'asmaā' + 'as'. 'a' + 'a' → ā by 6.1.101. 'yuṣmā' + 'as', 'asmā' + 'as'. Substitute 'n' in the place of 'a' of suffix '-as' by 7.1.29. 'yuṣmāns', 'asmāns'. Lopa (ɸ) of final 's' by "saṃyogāntasya lopaḥ (8.2.23). we get the forms 'yuṣmān' (you; accus pl) and 'asmān' (us; accus pl)

8.1 Third case singular suffix '-Ṭā : the basic form of the suffix Ṭā is added to nominal stems ending in consonants, It is also added to some stems ending in vowels. For example, marut+ Ṭā

→ marutā (Ṭ is deleted) 'by wind'. nadī + Ṭā → nadī + ā → nadyā (by river). Here 'y' is the substitute in place of 'ī' by "ikoyaṇaci (6.1.77). go + Ṭā → go +ā → gavā (by the cow). Here 'av' is the substitute in place of 'o' of 'go' by ecoyavāyāvaḥ (6.1.78).

8.2 Suffix Ṭā has two substitutes: (1) ina , (2) 'nā'.

8.3 substitute 'ina' takes place after a stem ending in short 'a' by "ṭā ṅasi ṅasāminātsyāḥ (7.1.12). the sūtra states that "after a stem ending in a short 'a' '-ina' is the substitute in place of 'Ṭā', '-āt' is the substitute in place of Ṅasi (5ᵗʰ case singular) and '-syā' is the substitute in place of 'Ṅas' (6ᵗʰ case singular). For example- 'rāma' + Ṭā. Ṭā is replaced by 'ina' by the present sūtra. rāma +ina →rāmena. Single substitute 'guṇa' for 'a' of the stem 'rāma' and 'i' of 'i' if the substitute 'ina' by 'ādguṇaḥ (6.1.87). Now 'ṇa' in the place of 'na' by 'aṭkupyāṅnumvyavāyepi (8.4.2), we get the form 'rāmeṇa' (by rāma). Similarly- deva + Ṭā → deva + ina → devena (by god).

8.4 Substitute 'nā' takes place after a stem called 'ghi' which is not feminine by "āṅo nāstriyām (7.3.120)". The sūtra states that 'nā' is the substitute in place of 'āṄ' (i.e. Ṭā) after a 'ghi' stem which is not in the feminine. For example- 'agni' + Ṭā. Ṭā is replaced by 'nā' by the present sūtra. agni +nā → agninā (by fire).

9.1 Third case plural suffix – bhis → example, for basic suffix – bhis. sakhi+ bhis → sakhibhis → sakhibhiḥ (by /with friends), rājan +bhis → rāja+bhis, 'n' is deleted by "nalopaḥ prātipadikāntasya (8.2.7) rājabhis → rājabhiḥ (by / with kings).

9.2 The suffix bhis has only one substitute –'ais'. The substitute suffix '-ais' takes place after a stem ending in a short 'a' by "atobhisa ais (7.1.9). The sūtra states that "-ais is the substitute in place of '–bhis' after a stem ending in a short 'a'. For example- rāma + bhis → rāma + ais. ais is the substitute in place of bhis by the present sūtra. rāma + ais → rāmais. vṛddhi for 'a' + ai → 'ai' by 'vṛddhireci (6.1.88) rāmais → rāmaiḥ (by /with Rāma).

10.1 Fourth case singular suffix Ṅe. Examples- Where basic case suffix Ṅe is not replaced. pitṛ + Ṅe → pitṛ + e (Ṅ is dropped) → pitr + e, ṛ is replaced by 'r' by ikoyaṇaci (6.1.77) → pitre (to father). agni + Ṅe → agni + e →guṇa for the final vowel of agni by "ghnerniti 7.3.11". The sūtra states that the final vowel of a 'ghi' class stem is replaced by guṇa before a 'ṅit' suffix. agni + e → agne +e by the present sūtra. 'ay' substitute in place of 'e' of agne by 'ecoyavāyāvaḥ (6.1.78). agnay + e → agnaye (to the fire).

10.2 The suffix 'Ṅe' has three substitutes (1) –'ya' (2) smai (3) 'am'.

10.3 The substitute '–ya' takes place after a stem ending in a short 'a' by "Ṅeryaḥ (7.1.13). The sūtra states that "in place of 'Ṅe' 'ya' is the substitute after a stem ending in a short 'a'. For example - rāma + 'Ṅe'. 'Ṅe' is replaced by 'ya' by the present sūtra. rāma + 'ya'→ rāmāya. 'a' of rāma is lengthened (dirgha) by "supi ca (7.3.102).

10.4 The substitute '–smai' takes place after a pronominal stem (both masculine and neuter) ending in a short 'a' by sarvanāmaḥ smai (7.1.14). The sūtra states that 'smai' is the substitute in

place of 'Ṅe' after sarvanāma (a pronominal). For example – sarva + 'Ṅe' → sarva +smai. 'smai' substitute in place of 'Ṅe' by the present sūtra. sarvasmai (to all or to the whole).

10.5 The substitute '–am' takes place after pronominals yuṣmad and asmad by ṅe prathamayoram (7.1.28). yuṣmad + am, asmad + am. am in place of Ṅe by the present sūtra. yuṣm and asm are replaced by 'tubhya' and 'mahya' by "tubhyamahyau ṅayi (7.2.95)" tubhya-ad + am, mahya-ad + am. Pūrvarūpa single substitute for a + a → a by "atoguṇe (6.1.97). tubhyad + am, amhyad + am. 'd' is dropped by "śeṣe lopaḥ (6.1.97). tubhya + am, mahya + am pūrvarūpa single substitute for a + a →a by "ami pūrvaḥ (6.1.107). tubhya + am→ tubhyam, mahya + am → mahyam.

11.1 Fifth case singular suffix 'Ṅasi' : Examples, where 'Ṅasi' is not replaced - marut + 'Ṅasi' marut + as →'Ṅ' ans 'i' are deleted. marutas → marutrU →marutar → marutaḥ (from the air), 'śiras' + 'Ṅasi' → 'śiras' + 'as' → 'śirasas' 'śirasarU' 'śirasar' 'śirasaḥ'(from the head).

11.2 The suffix 'Ṅasi' has four substitutes (1) '-āt' (2) '-smāt' (3) '-at' (4) single substitute with the preceding 'e' or 'o'.

11.3 The substitute '-āt' takes place after a non-pronominal stem ending in a short 'a' by "ṭā ṅasi ṅasāminātsyāḥ (7.1.12)". For example, rāma + Ṅasi → rāma + āt. āt for Ṅasi by the present sūtra. rāma+ āt → rāmāt (from Rāma). Lengthening of a + ā by "akaḥ savarṇe dīrghaḥ (6.1.101)".

11.4 The substitute '–smāt' takes place after a pronominal stem (both masculine and neuter) ending in a short 'a' by "ṅasiṅyoḥ smātsminau (7.1.15)". The sūtra states that "-smāt and smin are substitutes in place of Ṅasi and ṄI respectively after a pronominal stem ending in a short 'a'. For example, sarva +Ṅasi → sarva + smāt . smāt substitute in place of Ṅasi by the present sūtra. sarvasmāt (from everything).

11.5 The substitute '–at' takes place after stems yuṣmad, asmad by "ekavacanasya ca (7.1.32)". The sūtra states that 'at' is the substitute in place of Ṅasi of 'yuṣmad' and 'asmad' , 'yuṣmad +Ṅasi', 'asmad' + Ṅasi'→ yuṣmad + at, asmad + at. '-at' is the substitute for 'Ṅasi' by the present sūtra. 'yuṣm-,' asm-' are replaced by 'tva' and 'ma' respectively by "tvamāvekavacane (7.2.97). The sūtra states that 'tva' and 'ma' are substitute for parts 'yuṣm' and 'asm' respectively. 'tava-ad + at' , 'ma-da + at'. Single substitute for 'a' + 'a' → 'a' by 'atoguṇe (6.1.97). tvad+at, mad +at . 'd' is deleted by' śeṣe lopaḥ (7.2.90)' tva + at, ma + at. Single pūrvarūpa substitute for 'a' + 'a' → 'a' by 'atoguṇe (6.1.97)' we get the forms tvat (from you) and 'mat' (from me).

11.6 Single substitute 'e'/'o' for 'Ṅasi' ('e' / 'o' is the single substitute for 6ᵗʰ case suffix ('Ṅas', also). Example- hari + 'Ṅasi' → hari +as guṇa 'e' substitute in place 'i' of stem hari by gherṇiti (7.3.111) hari +as → hare + as. single substitute 'e' for e +a of as by "ṅasi ṅasośca (6.1.110)". hare+ as → hares→ harerU→ harer → visarga in place of 'r' → hareḥ (from /of Hari).

12.1 Sixth case singular suffix Ṅas : Example, where basic suffix 'Ṅas' has no substitute. marut + Ṅas → marut +as → marutas→marutarU→marutar →marutaḥ (of air/wind).

12.2 The suffix 'Ṅas' has three substitutes: '-sya', 'as' and single substitute with preceding 'e' or 'o'.

12.3 The substitute '-sya' takes place after stem ending in a short 'a' by "ṭā ṅasi ṅasāminātsyāḥ (7.1.12). For example, rāma + Ṅas→ rāma + sya, 'sya' substitute for Ṅasi by the present sūtra. 'rāmasya' (of Rāma).

12.4 substitute '–as' takes place after stems yuṣmad, asmad by "yuṣmadasmadbhyām ṅasoś (7.1.27)" The sūtra states that 'as' is the substitute in place of 'Ṅas' after stem 'yuṣmad' and 'asmad'. yuṣmad +as, asmad+as. 'as' substitute in place of 'Ṅas' by present sūtra. 'yuṣm' and 'asm' are replaced by 'tava' and 'mama' by 'tavamamau ṅasi' (7.2.96). The sūtra states that 'tava' and 'mama' are the substitute of 'yuṣm' and 'asm' respectively for 'Ṅas'. 'tava-ad + at', mama-ad + at'. Single pararūpa substitute for 'a' + 'a'→'a' by 'atoguṇe(6.1.97)'. 'd' is deleted by 'śeṣelopaḥ' (7.2.90). tava + at, mama + at. Single substitute for 'a' + 'a' → a by 'atoguṇe' (6.1.97). we get the form 'tava' (of you) and mama (of me).

12.5 Single substitute 'e' or 'o' in place of 'Ṅas', see above 11.6. The process is similar to that of 'Ṅasi'.

13.1 Sixth case plural suffix '-ām' : Basic suffix '-ām' where there is no substitute and no augment is added. Examples, bhūbhṛt + ām → bhūbhṛtām (of kings). Basic suffix '-ām' also occurs after stems ending in a long vowel other than a feminine suffix. For example- go + ām → gavām (of cow). '–av' substitute in place of 'o' by "ecoyavāyāvaḥ (6.1.78). senāni + ām → senānyām (of leaders). 'y' substitute in place of 'i' by 'ikoyaṇaci (6.1.77)".

13.2 Sixth case plural suffix '-ām' has only onesubstitute 'ākam' which comes after stems yuṣmad, asmad by "sāma ākam(7.1.33)". The sūtra states that 'ākam' is the substitute in place of 'ām' after 'yuṣmad' and 'asmad'. 'yuṣmad'+ 'am', 'asmad' + 'am'. Deletion of 'd' by 'śeṣe lopaḥ (7.2.90)' , 'yuṣma' + 'ām' and 'asma' + 'ām'→ 'yuṣm' + 'sUṬ' + 'ām', 'asma' + sUṬ+ 'ām', Augment 'sUṬ' by 'amisarvanāmnaḥ suṬ' (7.1.52). The sūtra states that augment sUṬ is added to '-am' after a pronominal stem ending in a/ā. 'yuṣma+ s + ām', 'asma + s + ām'. U and Ṭ are deleted. Now substitute 'ākam' is in place of 'sām' by 7.1.33. 'yuṣma + ākam', 'asma + ākam' → yuṣmākam (of you), asmākam (of us). Lengthening of a + ā → ā (akaḥ savarṇe dīrghaḥ 6.1.101).

13.3 The augments (āgama) are added to the suffix '-ām' under certain conditions. These augments are placed before '-ām' as per the applicational rule "ādyantau ṭakitau (1.1.46)". The rule states that an augment marker with 'Ṭ' is added before and augment marked with 'K' is added after.

 13.4 The augment 'sUṬ' is inserted before suffix ām after a pronominal stem ending in 'a/ ā' by "āmi sarvanāmaḥ sUṬ (7.1.52)." For example, 'sarva' + 'ām' → 'sarva' + 'sUṬ' + 'ām'→ 'sarva' + 's' + 'ām'→ 'sarve'+ 'sām'. 'a' of stem sarva is replaced by 'e' by "bahuvacane jhalyet (7.3.103). The sūtra states that 'e; is the substitute in place of a nominal stem ending in a short 'a' before a plural suffix beginging with the pratyāhāra JhaL (all consonants other than nasals)". Sarve + sām → sarveṣām (of all). 's' of sām is changed to 'ṣ' by "ādeśapratyayayoḥ (8.3.59).

13.5 The augment 'nUṬ' is inserted after a non-pronominal stem ending in-
(i) a short vowel. Augment 'nUṬ' ia added by sūtra "hrasvanadyāpo nuṭ (7.1.54)". The sūtra states that augment 'nUṬ' is inserted before the sixth case plural suffix 'ām' after a nominal stem ending in a short vowel, after the technical class called 'nadī' and after the stem ending in thefeminine suffix denoted by 'āp'. For example- deva + ām→ deva + nUṬ +ām → deva+ n+ ām devānām (of Gods). Lengthening of 'a' of the stem ' deva' by "nāmi (6.4.3). The sūtra states that a stem final vowel is lengthened before suffix '-ām'.

(ii) nUṬ is inserted after the stem of the technical class called 'nadī'. For example- nadī + ām→ nadī + nUṬ + ām → nadī + n + ām → nadīnām (of rivers).

(iii) 'nUT' is inserted after a stem ending in a feminine noun denoted by 'āp'. For example- mālā + ām → mālā + nUṬ + ām → mālā + n + ām → mālān + ām →mālānām (of garlands).
(iv) 'nUT' is inserted after a stem called 'ṣaṭ' by 'ṣaṭcaturbhyaśca (7.1.55). For example- saptan + ām → saptan + nUṬ + ām → saptan +n + ām→ 'n' of 'saptan' is deleted by "nalopaḥ prātipadikāntasya (8.2.7). 'sapta+ n + ām'→ saptanām (of seven). Lengthening of 'a' of 'saptan' by 'nāmi' (6.4.3).

14.1 Seventh case singular suffix 'Ṅi' : Examples- of the basic suffix where no substitute occurs. rāma + 'Ṅi' → rāma + 'i'. Ṅ is deleted. → rāma + i → rāme (in Rāma). Guṇa substitute for a + i → e by "ādguṇaḥ (6.1.87). bhūbhṛt + Ṅi → bhūbhṛt+ i bhūbhṛti.

14.2 Suffix 'Ṅi' has three substitutes- (1) '-smin' (2)'-ām' (3) '-auṬ'.

14.3 The substitute '-smin' takes place after a pronominal stem (both masculine and neuter) ending in a short 'a' by "ṅasiṅyoḥ smāt sminau (7.1.15). For example- sarva + 'Ṅi'→ sarva + smin→ sarvasmin. 'Ṅi' is replaced by '-smin' by the present sūtra.

14.4 The substitute '-smin' takes place (i) after a stem of technical class called 'nadī', (ii) after a stem ending in 'āP' and (iii) after a verbal noun ending in the root 'nī' by "ṅerāmnadyāmnībhyaḥ (7.3.116). The sūtra states that ām is the substitute in place of suffix 'Ṅī' after a stem of nadī class, after a stem ending in '-āP' and after a verbal noun ending in root 'nī'. Example- nadī + 'Ṅī' →nadī + ām. ām in the place of 'Ṅī' by the present rule. 'nadī' + 'ām' → nadyām (in the river). 'y' substitute in place of 'ī' of 'nadī' by 'ikoyaṇaci (6.1.77). ramā 'Ṅī'→ ramā +ām. 'Ṅi' is replaced by 'ām' by the present rule. Augment '-yaī' is inserted before 'ām' by 'yāḍāpaḥ (7.3.113). The sūtra states that "after a stem ending in 'āp', a ṅit suffix takes the augment 'yāṬ'. ramā +yāṬ + ām→ yamā +yā +ām →rāmāyām (in Ramā). Lengthening of 'ā' (of yā) and 'ā' (of ām) by "akaḥ savarṇe dīrghaḥ (6.1.101)". senā-ni + 'Ṅi' → senā-ni + ām → senānyām (in the leader of the army). 'y' in place of 'ī' (of 'nī') by 'ikoyaṇaci (6.1.77).

14.5 The auṬ takes place after a stem ending in 'i' or 'u' which does not belong to 'nadī' or 'ghi' class by 'aut (7.3.118). The sūtra states that auṬ is the substitute in place Ṅi a stem which belongs neither to the nadī class nor to the ghi class. For example- sakhi + Ṅi. 'Ṅi' is replaced by auṬ by the present sūtra. Sakhi + auṬ→ sakhi au (Ṭ is deleted) → sakhyau (in the friends). 'y' in the place 'i' by 'ikoyaṇaci (6.1.77). Hari +'Ṅi'→Hari + auṬ → Hari + au. The sūtra "acca gheḥ (7.3.119)" replaces 'Ṅi' by 'auṬ' and simultaneously the stem final 'i' (of Hari) by short

vowel 'a'. Hari + au → harau (in Hari). Vriddhi of a+a=au by "vṛddhireci (6.1.88). Similarly, bhānu +au →bhānau (in the sun).

15.1 It may be noted that some case suffixes have no substitutes. For example, suffix '-bhyām' of 3^{rd,} 4th and 5th case dual has no substitutes. Example, 'rāma' + 'bhyām' → rāmābhyām. Lenthening of 'a' of the stem by "supi ca (7.3.102).

15.2 The 6th and 7th case dual suffix 'os' has no substitute. Example: rāma+ os → rāme + os. 'e' in place of the stem 'rāma' by "osica (7.4.104). rāme + os → rāmay + os. ay in the place of 'e' by "ecoyavāyāvaḥ (6.1.78). rāmay + os → rāmayos →rāmayorU→ rāmayor→ rāmayoḥ (of two Rāmas).

15.3 The 7th case plural 'sup' has no substitute. For example- "rāma' + 'suP'→ 'rāma' + 'su'→ 'rāme' + 'su'. 'e' in the place of 'a' of the stem by "bahuvacanejhalyet (7.3.103). 'rāme' + 'su'→ rāmeṣu. 's' is replaced by 'ṣ' by 'ādeśapratyayoḥ (8.3.59).

15.4 The 4th and 5th case plural suffix bhyas and 6th case plural suffix '-ām' have no substitutes except when these suffixes are attached to yuṣmad and asmad. 4th case plural suffix 'bhyas' after these stems is replaced by 'abhyam' by "bhyaso bhyam (7.1.30)" and 5th case one by '-at' by "pañcamyā at (7.1.31). For example- 'yuṣmatad' + 'bhyas', 'asmad' + 'bhyas'. '-bhyas' is replaced by 'abhyam', 'yuṣmad'+ 'abhyam', 'asmad' + 'abhyam'. ad (Ṭi portion) is deleted by "śeṣa lopaḥ (7.2.90). "yuṣm' + 'abhyam'→ yuṣmabhyam (for you). 'asm' + 'abhyam'→ asmābhyam (for us). 'yuṣmad' + 'bhyas', 'asmad' +'bhyas'. (5th case plural) 'at' is the substitute in place of 'bhyas' (by 7.1.31). yuṣmad' + 'at', 'asmad' +'at'. 'yuṣm' and 'asm' are replaced by 'tva' and 'ma' by "tvamāvekavacane (7.2.97). 'tva-ad' + 'at', 'ma-ad' + 'at'. Deletion of 'Ṭi' portion (i.e. 'ad') by "śeṣe lopaḥ (7.2.90)". 'tva' + 'at' → 'tvat' (from you), 'ma' + 'at' → 'mat' (from me). 'a' + 'a' = 'a' by "atoguṇe (6.1.97). 6th case plural suffix '-ām' is replaced by 'ākam' afte 'yuṣmad' and 'asmad' by 'sāma ākam' (7.1.33). 'yuṣmad' + 'ākam', 'asmad' + 'ākam'. 'Ṭi' portion (i.e. 'ad') is deleted by "śeṣe lopaḥ (7.2.90)". 'yuṣm' + 'ākam' → 'yuṣmākam' (of your), 'asm' + 'ākam' → 'asmākam' (of us).

16.1 It may also be noted that five case suffixes , namely 1st case singular '–sU', dual '–au', plural '-Jas', 2nd case singular suffix '-am' and dual '-auṬ' are called sarvanāmasthāna after a non-neuter stem and also the substitute '-Śi' of 1st and 2nd case plural after a neuter stem by "ṣaḍnapuṃsakasya(1.1.83) " and "śi sarvanāmasthānam(1.1.42)". Some stems undergo some changes before the sarvanāmasthāna suffixes.
For example-
(i) a stem ending in 'n' lengthens its penultimate vowel 'a' before a sarvanāmasthāna suffix other than 1st case suffix 'sU' used in the vocative by "sarvanāmasthāne ca sambuddhau (6.4.8). For example, 'rājan' + 'sU'→ 'rājan' + 's'→ lengthening of the penultimate vowel of the stem by 6.4.8. 'rājans' + 's' → 'rājāns'. Deletion of 's' and 'n' by 6.1.68 and 8.2.7 respectively. We get the form 'rājā'
(ii) 'ṛ' at the end of a stem before a sarvanāmasthāna suffix undergoes 'guṇa' change. For example, 'pitṛ' + 'au' → pitarau (fathers). Guṇa for 'ṛ' by " ṛtoṅisarvanāmasthānayoḥ (7.3.110)".

17.1 Summary : Here an attempt has been made to analyse the case suffixes (declensional suffixes) of Sanskrit as per Pāṇini. These suffixes are represented by the pratyāhāra 'sUP'. The chart below shows the basic 'sUP' suffixes with substitutes (the chart has been taken from 'Pāṇinian Linguistics with minor corrections). The cases are cited by numbers:

Cases	Basic suffix	Substitutes
1st singular	'sU'	LUK(ϕ), am, adD
1st & 2nd dual	'au'	Śī, am, ū (single substitute of long counterpart of the preceding vowel
1st plural	'Jas'	'Śī', 'Śi', 'auŚ', '-LUK(ϕ)', 'am', (single substitute of long counterpart of the preceding vowel
2nd singular	'-am'	LUK(ϕ), adD, single substitute by the preceding vowel
2nd plural	'Śas'	'Śi', 'auŚ', '-LUK(ϕ)', (single substitute of long counterpart of the preceding vowel
3rd singular	Ṭā	'ina', 'nā'
3rd , 4th & 5th dual	bhyām	No substitute
3rdd plural	bhis	'ais'
4th singular	Ṅe	'-ya', 'smai', '-am'
4th plural	bhyas	bhyam
5th singular	Ṅasi	'āt', 'smāt', 'at', single replacement of preceding vowel
5th plural	bhyas	'at'
6th singular	Ṅas	'sya, 'aŚ', single replacement of preceding vowel
6th & 7th dual	os	No substitute
6th plural	ām	ākam
7th singular	Ṅi	'smin', 'ām' 'auṬ'
7th plural	suP	No substitute

Just as illustration, below the declination of masculine, feminine and neuter stems are given:
Masculine stem ending in 'a': rāma

Vibhakti/vacana	singular	Dual	Plural
prathamā	rāmaḥ	rāmau	rāmāḥ
dvitīyā	rāmam	rāmau	rāmān
tṛtīyā	rāmeṇa	rāmābhyām	rāmaiḥ
caturthī	rāmāya	rāmābhyām	rāmebhyaḥ
pañcamī	rāmāt/rāmād	rāmābhyām	rāmebhyaḥ
ṣaṣṭhī	rāmasya	rāmayoḥ	rāmāṇām
saptamī	rāme	rāmayoḥ	rāmeṣu
sambodhana/vocative (he)	rāma	rāmau	rāmāḥ

Femanine stem ending in 'ā', ramā:

	ekavacanam	dvivacanam	bahuvacanam
prathamā	ramā	rame	ramāḥ
dvitīyā	ramām	rame	ramāḥ
tṛtīyā	ramayā	ramābhyām	ramābhiḥ
caturthī	ramāyai	ramābhyām	ramābhyaḥ
pañcamī	ramāyāḥ	ramābhyām	ramābhyaḥ
ṣaṣṭhī	ramāyāḥ	ramayoḥ	ramāṇām
saptamī	ramāyām	ramayoḥ	ramāsu
sambodhana	rame	rame	ramāḥ

Neuter stem ending in 'a' , jñāna:

	Singular	Dual	Plural
prathamā	jñānam	jñāne	jñānāni
dvitīyā	jñānam	jñāne	jñānāni
tṛtīyā	jñānena	jñānābhyām	jñānaiḥ
caturthī	jñānāya	jñānābhyām	jñānebhyaḥ
pañcamī	jñānāt	jñānābhyām	jñānebhyaḥ
ṣaṣṭhī	jñānasya	jñānayoḥ	jñānānām
saptamī	jñāne	jñānayoḥ	jñāneṣu

18.1 Students are adviced to go through the 9th chapter of Pāṇinian linguistics on case inflection. Also the 10th chapter on derivation system of the aṣṭādhyāyī of Pāṇini vol 1 by Ramanath Sharma and also Devavāṇīpraveśikā of Robert P. Goldman and Sally J Sutherland.

19.1 Glossary:

sUP - pratyāhāra sUP denotes all the basic suffixes
tiṄ- pratyāhāra tiṄ denotes all the basic finite verb suffixes both parasmaipada (active) and ātmanepada (medio-passive)
kṛt – primary derivational suffixes
taddhita – secondary derivational suffixes
strīpratyaya- feminine formation suffixes
vibhakti – case endings(personal endings of verbs are also called vibhakti.
vacana - Number
ekavacana – singular number
dvivacana – dual number
bahuvacana - plural number
prātipadika – nominal stem

ghi – A nominal stem that ends in a short 'i' or 'u'except sakhi – 'friend' and pati- 'husband'
nadī - A feminine stem ending in 'i', 'ī', 'u' or 'ū' with certain exceptions.

20.1 Assignments

1. Write out the paradigm of 'nara' (masculine), 'mālā' (feminine) and 'gṛha'(neuter).
2. Define the term sarvanāmasthāna.
3. What way the vocative is different from nominative?
4. Give the derivation of Instrumental plural of stems- deva (deva + bhis), latā (latā +bhis), and vāri (vāri +bhis)
5. Match the basic case suffixes and the cases to which they are attached.
    A. Ṅasi   i) 3rd case singular
    B. Śas   ii) 7th case singular
    C. Ṅi   iii) 2nd case singular
    D. Ṭā   iv) 5th case singular

6. List the basic case suffixes which do not have substitutes

7. Which basic suffixes are replaced by substitutes –at and -ākam

8. Does your mother tongue have system of case? If yes, describe it.

21.1 Source Materials and Recommended Readings:

1. Subhramanyam P. S. Pāṇinian Linguistics, Tokyo University of Foreign Studies, 1999.
2. Sharma, Ramanath, Aṣṭādhyāyī of Pāṇini. Vol. I, Munshiram Manoharlal, 1987
3. Vaiyākarana Siddhantakaumudi of Bhaṭṭoji Dīksita,
4. Laghusiddhāntakaumudi of Varadarājā.
5. Goldman. Robert P and Sally J. Sutherland. Devavānīpraveśikā. University of California, Berkeley, 1987
6. Abhyankar. K.V and Shukla. J.M.A Dictionary of Sanskrit Grammar. Oriental Institute. Baroda, 1977