

Phonetics Exercises—Answers, p. 1

PART 1: Review Exercises

1. Write down the phonetic symbols representing the following descriptions, and illustrate each of the sounds with two English words.

a) A voiced labiodental fricative [v]	h) A high front tense unrounded vowel [i]
b) A voiceless alveolar fricative [s]	i) A low back lax unrounded vowel [ɒ]
c) A voiced palato-alveolar affricate [ʃ]	j) A mid front tense unrounded vowel [e]
d) A voiceless glottal fricative [h]	k) A mid front lax unrounded vowel [ɛ]
e) A voiceless bilabial stop [p]	l) A high back lax rounded vowel [ʊ]
f) A voiceless dental fricative [θ]	m) A low back lax rounded vowel [ɔ]
g) A voiced velar stop [g]	n) A high front tense rounded vowel [iː]

2. Answer the following questions.
 - a) What voiced consonant has the same place of articulation as [t] and the same manner of articulation as [f]? [tʃ]
 - b) What voiceless consonant has the same active articulator as [b] and the same passive articulator as [θ]? [f]
 - c) What voiced consonant has the same place of articulation as [m] and the same manner of articulation as [g]? [b]
 - d) What voiced consonant has the same active articulator as [n] and the same passive articulator as [f]? [ɱ]
 - e) Which tense vowel has the same height as [ɪ] and the same advancement as [a]? [u]
 - f) Which rounded vowel has the same height as [ɛ]? [ɔ]

3. Indicate whether the following statements are TRUE or FALSE.
 - a. T The term labio-dental refers to an obstruction caused by movement of the lower lip towards the upper teeth.
 - b. T [ow] is the vowel in the word *show*.
 - c. F [z, θ, v] The production of these sounds involves a vibration of the vocal cords.
 - d. T [w, k, g] The production of these sounds involves a movement of the body of the tongue in the direction of the velum.
 - e. F [o, u, a] In the production of these sounds the lips are rounded.
 - f. F A retroflex sound is produced when the body of the tongue moves up and back in the direction of the palato-alveolar region.
 - g. F [ɛ] is the vowel sound in the word *money*.
 - h. F The term dental refers to an obstruction caused by movement of the lower lip towards the upper teeth.
 - i. F Plosives are produced with complete closure in the vocal tract followed by a gradual release.

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- j. F The term backness refers to the movement of the blade of the tongue.
 k. T [š, ž, č] The production of these sounds involves the movement of the tongue blade in the direction of the palato-alveolar region.
 l. F [uw] is the vowel sound in the word *country*.
 m. T Approximants are produced by two articulators coming close together, but not close enough to cause friction.
 n. F [m, n, k] In the production of these sounds the velum is lowered.
 o. F The term tense refers to the level the tongue is raised from the bottom of the mouth

4. Do the following pairs of consonants have the same or different place of articulation?

[s] : [l] same	[b] : [f] different	[l] : [t] same
[k] : [ŋ] same	[č] : [j] same	[ð] : [v] different
[p] : [g] different	[s] : [v] different	[č] : [s] different
[l] : [r] same	[ð] : [t] different	[m] : [ŋ] different
[m] : [n] different	[s] : [θ] different	[h] : [ʔ] same
[č] : [š] same	[k] : [g] same	[f] : [š] different
[f] : [h] different	[w] : [y] different	[w] : [j] different

5. Do the following pairs of vowels have the same or different quality of tenseness?

a) back – sat same [æ]	h) hide – height same [ay]
b) shop – caught different [a, ɔ:]	i) least – heed same [iy]
c) bid – key different [ɪ, iy]	j) drug – cook same [ʌ, ʊ]
d) luck – flick same [ʌ, ɪ]	k) sink – fit same [ɪ]
e) fill – feal different [ɪ, iy]	l) oak – own same [ow]
f) food – foot different [uw, ʊ]	m) sun – bed same [ʌ, ε]
g) fell – fail different [ε, ey]	n) got – farm different [a, a:]

6. For each of the following, state whether it is a natural class in English. If it is, define it in terms of the minimal set of features needed to distinguish it from all other sets of phonemes.

- | | |
|---|-----------------------------------|
| a. / m, n, ŋ, l, r, y, w / sonorant Cs | h. / p, b, k, g, t, d / stops |
| b. / p, k, t / voiceless stops | i. / ɪ, ε, æ / front Vs |
| c. / w, y, k, g, ŋ / dorsal Cs | j. / m, n, ŋ / nasals |
| d. / ʊ, ɔ / rounded Vs | k. / s, z, š, ž, č, ʃ / sibilants |
| e. / t, d, θ, ð, s, z, š, ž / not a natural class | l. / ε, ə, ʌ / mid Vs |
| f. / f, θ, s, š, h / voiceless fricatives | m. / p, b / bilabial stops |
| g. / p, b, v, f, m, w / labial Cs | |

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Part 2: Additional Practice

1. Transcribe the following words. In each line, circle the word(s) that begin(s) with a consonant that meets the description on the left.

Alveolar	meat [mi:t]	pat [pæt]	sit [sɪt]	boat [bəʊt]	rate [reɪt]
Velar	green [ɡri:n]	tool [tu:l]	case [keɪs]	hot [hɒt]	knot [nɒt]
Labiodental	cat [kæt]	this [ðɪs]	chat [tʃæt]	vat [væt]	fat [fæt]
Bilabial	brick [brɪk]	thick [θɪk]	lick [lɪk]	sick [sɪk]	pick [pɪk]
Dental	pay [peɪ]	thank [θæŋk]	witch [wɪtʃ]	thought [θɔ:t]	tough [tʌf]
Palato-alveolar	sigh [saɪ]	clay [kleɪ]	tie [taɪ]	sure [ʃʊə]	judge [ʃɪdʒ]
Affricate	church [tʃɜ:ʃ]	garage [ɡərə:ʒ]	noon [nu:n]	jury [dʒʊəri]	touch [tʌtʃ]
Lateral	boat [bəʊt]	late [leɪt]	pray [preɪ]	never [nevə]	love [lʌv]

2. Indicate whether the following statements are TRUE or FALSE.
- F Raising the velum enables the air to flow through the nasal tract.
 - T In the articulation of voiced sounds, the vocal cords are brought close together.
 - T Different sounds are created by changing the properties of the vocal tract.
 - F The tip/blade of the tongue is one of the passive articulators.
 - T The velum is one of the passive articulators.
 - F During normal breathing, the vocal cords are close together and vibrate.
 - F Most speech sounds are made by allowing air to flow through the nose.
 - T Both passive and active articulators are involved in the production of speech sounds.
 - F The tip/blade of the tongue, the body of the tongue and the upper lip are the active articulators.
 - F The glottis surrounds the vocal cords.

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3. Transcribe the following words and circle the one(s) that contain(s) a vowel that fits the description on the left.

Low	small [smɔ:l]	bat [bæt]	great [ɡreɪt]	car [kɑ:ɪr]	flea [fli:ə]
Front	river [rɪvər]	song [sɔ:ŋ]	tell [tɛl]	trap [træp]	bright [braɪt]
Back	loud [laʊd]	so [səʊ]	left [left]	mud [mʌd]	trip [trɪp]
High	shore [ʃɔ:ɪr]	shop [ʃɒp]	bank [bæŋk]	fall [fɔ:l]	moose [mu:s]
Rounded	meet [mi:t]	coarse [kɔ:ɪs]	such [sʌtʃ]	group [ɡru:p]	cry [kraɪ]

4. Indicate whether the following statements are TRUE or FALSE.
- F Every vowel symbol represents one specific articulation.
 - T A sound whose articulation involves movement from one vowel position to another is called a diphthong.
 - F The terms 'high' 'low' and 'central' refer to the distance between the jaws.
 - F Tense vowels are usually long in all languages.
 - T A monophthong is described along five dimensions.
 - T The concept of vowel height is relative.
 - F All diphthongs are long, tense and central.
 - T The right side of the vowel quadrilateral represents the back of the oral cavity.
5. Compare the sounds in the following groups. Describe in detail the movements of articulators common to the sounds in each group and define the differences between them (i.e. in terms of the relevant phonetic features).
- [ɪ, ɛ, æ] The body of the tongue moves forward (these are all front vowels), and they differ in height.
 - [iɪ, u, uɪ] The body of the tongue moves upward (these are all high vowels), and they differ in backness.
 - [s, θ, f] The air leaves the body gradually, creating friction (these are all fricatives), and they differ in the place of articulation.
 - [j, w, r] The tip/blade of the tongue moves in the direction of the passive articulator (palate or alveolar ridge), but does not create friction (these are glides), and they differ in the place of articulation.
 - [t, d, n, z] The tip/blade of the tongue touches the alveolar ridge (these are all alveolars), and they differ in the manner of articulation.