Intro to Linguistics – HW 1 – Phonology $_{\rm Jirka\ Hana\ -\ October\ 31,\ 2011}$

Consider the following German words:

[bux]	Buch 'book'	[kuxən]	Kuchen 'cake'
[miç]	mich 'me'	[milç]	Milch 'milk'
[koxən]	kochen 'to cook'	[feçər]	Fächer 'fan'
[bax]	Bach 'brook'	[naxt]	Nacht 'night'
[medçən]	Mädchen 'girl'	[axt]	acht 'eight'
[lox]	Loch 'hole'	[hoxx]	hoch 'high'
[laxən]	lachen 'laugh'	[∫prɛçən]	sprechen 'speak'
[fluxt]	flucht 'flight'	[ɛlç]	Elch 'elk'

Note: Assume I have provided all relevant data. Also, the data are slightly simplified.

Answer the following questions:

- 1. Are $[\varsigma]$ and [x] allophones of the same phoneme?
- 2. Why?
- 3. If yes, write a rule realizing that phoneme