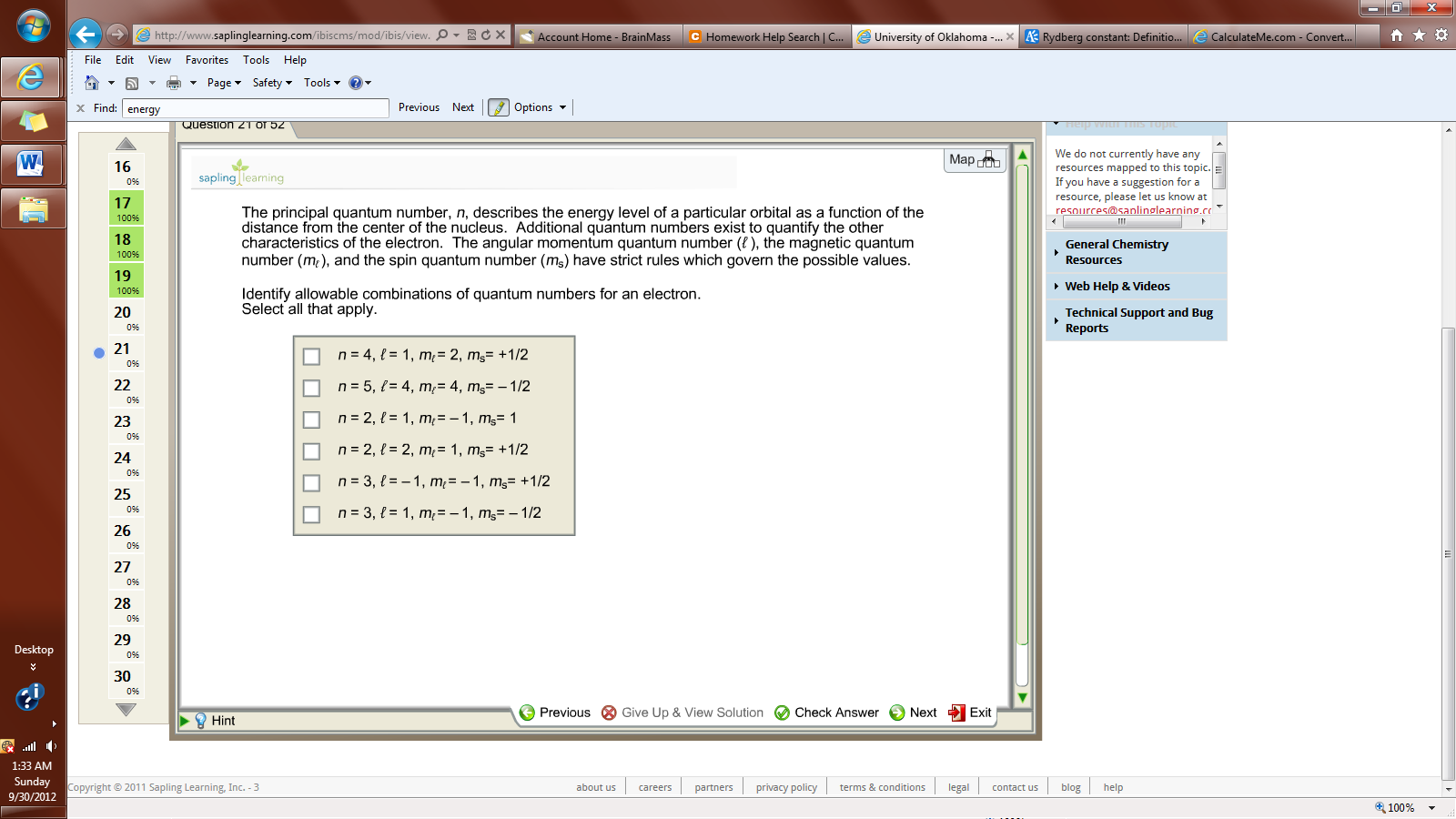
HWU4-21

QUESTION:

The principal quantum number, *n*, describes the energy level of a particular orbital as a function of the distance from the center of the nucleus. Additional quantum numbers exist to quantify the other characteristics of the electron. The angular momentum quantum number (ℓ), the magnetic quantum number (mℓ), and the spin quantum number (ms) have strict rules which govern the possible values.

Identify allowable combinations of quantum numbers for an electron.

Select all that apply.



HINT:

First see if the *n* and *ms* values are possible, since the rules for these numbers are independent of the other values. Then see if the *ℓ* value is possible based on *n*. Then see if *mℓ* is possible based on *ℓ*.