

31. Without the spin degree of freedom the number of available electron states for each shell would be reduced by half. So the values of Z for the noble gas elements would become half of what they are now: $Z = 1, 5, 9, 18, 27$, and 43 . Of this set of numbers, the only one which coincides with one of the familiar noble gas atomic numbers ($Z = 2, 10, 18, 36, 54$, and 86) is 18 . Thus, argon would be the only one that would remain “noble.”