Iron – a metal: true or false?

The statements below refer to the diagram of the structure of iron. The diagram shows part of a slice through the three-dimensional structure.

Read each statement carefully and decide if it is correct or not. **Circle your answer.**

|  |  |
| --- | --- |
| 1. Iron has a type of bonding called metallic bonding.
 | **True / False** |
| 1. Iron atoms do not have a full outer shell of electrons and this makes iron very reactive.
 | **True / False** |
| 1. Iron is a silvery-grey metal because iron atoms are silvery-grey.
 | **True / False** |
| 1. Iron can conduct electricity because iron atoms can slip over their neighbours and move through the solid.
 | **True / False** |
| 1. Iron can be re-shaped, without changing the shape of iron atoms.
 | **True / False** |
| 1. Iron rusts because iron atoms will rust if exposed to damp air.
 | **True / False** |
| 1. In iron metal, each atom is bonded to each of the other iron atoms surrounding it.
 | **True / False** |
| 1. Iron conducts electricity because iron atoms are electrical conductors.
 | **True / False** |
| 1. Iron is a solid because that is the natural state for metals.
 | **True / False** |
| 1. A metal consists of positive metal ions and negative electrons which move around the solid between the ions.
 | **True / False** |
| 1. An iron atom will reflect light and so freshly polished iron shines.
 | **True / False** |
| 1. Iron becomes a liquid when heated because the bonds melt.
 | **True / False** |
| 1. Iron conducts electricity because it contains a ‘sea’ of electrons.
 | **True / False** |
| 1. The atoms in iron are held together by ionic bonds.
 | **True / False** |
| 1. Iron conducts heat because there is room between the atoms for hot air to move through the metal.
 | **True / False** |
| 1. Iron is hard because iron atoms are hard.
 | **True / False** |
| 1. Iron contains molecules held together by magnetism.
 | **True / False** |
| 1. If iron is heated to a very high temperature, it will become a gas.
 | **True / False** |
| 1. Iron expands when it is heated because iron atoms get bigger.
 | **True / False** |
| 1. Chemical bonds are needed to hold the atoms together in iron, even though all of the atoms are of the same type.
 | **True / False** |