

1. What is the best way to tell the difference between quartz and calcite? Explain  
The best way to tell the difference between these two is to conduct a hardness test. Quartz is considered hard and will scratch glass. Calcite is considered soft and will not scratch glass.

2. What is the best way to tell the difference between quartz and feldspar? Explain  
Since both quartz and feldspar are considered hard and would scratch glass after a hardness test, you can tell the difference by the mineral's cleavage. Quartz has poor or absent cleavage, while feldspar has excellent or good cleavage.

3. What is the best way to tell the difference between muscovite and biotite? Explain  
The best way to tell the difference between these two minerals is color. Muscovite is a white mica and biotite is a black mica.

4. Describe mineral cleavage.

Mineral cleavage is how some minerals break along flat and parallel surfaces. It can be described as excellent, good, or poor based on the lines that occur after breaking. The more light that can be reflected from the cleavage planes, the better the cleavage is.

5. Why is color not an ideal property to use for identifying silicate minerals?

Silicate minerals are composed of pure quartz. Sometimes quartz is a different color, but it is still quartz. So if you were to try to identify silicate minerals based on color, you may not identify some minerals that you were supposed to.

6. Name the eight major igneous rock-forming silicate minerals (hint, see the Bowen's Reaction Series).

The eight major igneous rock-forming silicate minerals are: olivine, pyroxene, biotite, amphibole, potassium feldspar, muscovite, quartz, and plagioclase feldspar.