

STUDENT A

Read the text and ask student B questions to complete the spaces. Then answer student B's questions.

RUBY

Adapted from <http://en.wikipedia.org/wiki/Ruby>

The ruby is a **1.** to blood-red colored gemstone, a variety of the mineral corundum (aluminium oxide). The red color is caused mainly by the presence of the element **3.** Its name comes from *ruber*, Latin for red. Other varieties of gem-quality corundum are called **5.** The ruby is considered one of the four precious stones, together with the sapphire, the emerald, and the diamond.

Prices of rubies are primarily determined by **7.** The brightest and most valuable "red" called pigeon blood-red, commands a huge premium over other rubies of similar quality. After color follows **9.** : similarly to diamonds, a clear stone will command a premium, but a ruby without any needle-like rutile inclusions may indicate that the stone has been treated. Cut and carat (weight) also determine the price.

STUDENT B

Read the text and answer student A's questions. Then ask student A questions to complete the spaces.

RUBY

Adapted from <http://en.wikipedia.org/wiki/Ruby>

The ruby is a pink to blood-red colored gemstone, a variety of the mineral **2.** (aluminium oxide). The red color is caused mainly by the presence of the element chromium. Its name comes from *ruber*, Latin for **4.** Other varieties of gem-quality corundum are called sapphires. The ruby is considered one of the four precious stones, together with the sapphire, the **6.**, and the diamond.

Prices of rubies are primarily determined by color. The brightest and most valuable "red" called **8.**, commands a huge premium over other rubies of similar quality. After color follows clarity: similarly to diamonds, a clear stone will command a premium, but a ruby without any needle-like rutile inclusions may indicate that the stone has been treated. Cut and **10.** (weight) also determine the price.

Read the article and fill the gaps with appropriate words.

RUBY: PHYSICAL PROPERTIES

Adapted from <http://en.wikipedia.org/wiki/Ruby>

| | | | |
|-------------------------|------------------------------------|------------------------------|-------------------|
| gems | harder | absorbed | effect |
| luminescence | scale | chromium³⁺ | stimulated |
| octahedrally | corundum | region | |
| crystallographic | Al₂O₃ | mirrors | |
| white | laser | luster | |

Rubies have a hardness of 9.0 on the Mohs **1.** of mineral hardness. Among the natural **2.** only moissanite and diamond are **3.** , with diamond having a Mohs hardness of 10.0 and moissanite falling somewhere in between **4.** (ruby) and diamond in hardness. Ruby is α -alumina (the most stable form of **5.**) in which a small fraction of the aluminum³⁺ ions are replaced by **6.** ions. Each Cr³⁺ is surrounded **7.** by six O²⁻ ions. This **8.** arrangement strongly affects each Cr³⁺, resulting in light absorption in the yellow-green **9.** of the spectrum and thus in the red color of the gem. When yellow-green light is **10.** by Cr³⁺, it is re-emitted as red **11.** This red emission adds to the red colour perceived by the subtraction of green and violet light from **12.** light, and adds **13.** to the gem's appearance. When the optical arrangement is such that the emission is **14.** by 694-nanometer photons reflecting back and forth between two **15.** , the emission grows strongly in intensity. This **16.** was used by Theodore Maiman in 1960 to make the first successful **17.** , based on ruby.