

Science of Colors and Geometry of Shapes

Science & Mathematics · Answer Key · 8 Questions

1. Which of the five regular Platonic solids has exactly 20 faces, all of which are equilateral triangles?

- A) Octahedron
- B) Dodecahedron
- C) Icosahedron**
- D) Tetrahedron

2. In the visible light spectrum, which color has the shortest wavelength and highest frequency?

- A) Red
- B) Yellow
- C) Violet**
- D) Green

3. Which specialized sensory cells in the human retina are primarily responsible for detecting color in daylight?

- A) Rods
- B) Cones**
- C) Ganglion cells
- D) Bipolar cells

4. In the additive color system used by digital screens and televisions, which three primary colors mix together to form white light?

- A) Red, Yellow, and Blue
- B) Cyan, Magenta, and Yellow
- C) Red, Green, and Blue**
- D) Orange, Green, and Violet

5. What is the exact sum of all interior angles inside a regular six-sided polygon (hexagon)?

- A) 540 degrees
- B) 720 degrees**
- C) 360 degrees
- D) 900 degrees

6. Rubies and sapphires are both varieties of the mineral corundum. Which trace chemical element causes a ruby's characteristic red color?

- A) Titanium
- B) Iron
- C) Chromium**
- D) Copper

7. What is the name of a two-dimensional surface that has only one side and only one continuous boundary edge?

- A) Klein bottle
- B) Möbius strip**
- C) Torus
- D) Hyperboloid

8. Which type of light scattering by atmospheric gases is primarily responsible for making the Earth's clear sky appear blue?

- A) Mie scattering
- B) Rayleigh scattering**
- C) Raman scattering
- D) Compton scattering