

# Advanced Foundations of Basic Geometry

Geometry · Answer Key · 8 Questions

---

**1. What is the specific name for a polygon with exactly seven sides?**

- A) Heptagon**
- B) Septagon
- C) Nonagon
- D) Heptagram

**2. In Euclidean geometry, what is the sum of the interior angles of a convex heptagon?**

- A) 720 degrees
- B) 900 degrees**
- C) 1080 degrees
- D) 1260 degrees

**3. Which term describes two angles that share a common vertex and a common side but do not overlap?**

- A) Vertical angles
- B) Complementary angles
- C) Adjacent angles**
- D) Supplementary angles

**4. What is the ratio of a circle's circumference to its diameter, denoted by the Greek letter pi, approximately equal to?**

- A) 3.14159**
- B) 3.14285
- C) 3.14162
- D) 3.14321

**5. A Platonic solid is a regular, convex polyhedron. How many faces does a regular icosahedron have?**

- A) 8
- B) 12
- C) 20**
- D) 30

**6. What is the minimum number of non-collinear points required to uniquely define a plane?**

- A) 2
- B) 3**
- C) 4
- D) 6

7. According to the Pythagorean theorem, for a right-angled triangle with legs  $a$  and  $b$  and hypotenuse  $c$ , which equation holds true?

- A)  $a+b=c$
- B)  $a^2+b^2=c$
- C)  $a^2+b^2=c^2$**
- D)  $a^3+b^3=c^3$

8. Which geometric shape is defined as the locus of all points in a plane that are equidistant from a single fixed point called the focus?

- A) Ellipse
- B) Parabola
- C) Circle**
- D) Hyperbola