

# SPARK Hybrid Education Center

Mathematics Unit Test | January - Geometry | Lower Level

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 100

## SECTION 1: Multiple Choice (1 point each = 10 points)

1. An angle measuring 90 degrees is called:

- A) acute
- B) right
- C) obtuse
- D) straight

2. Two lines that never intersect are called:

- A) perpendicular
- B) intersecting
- C) parallel
- D) transversal

3. Which type of triangle has all sides equal?

- A) scalene
- B) isosceles
- C) right
- D) equilateral

4. The sum of interior angles in any triangle is:

- A) 90 degrees
- B) 180 degrees
- C) 270 degrees
- D) 360 degrees

5. A quadrilateral with exactly ONE pair of parallel sides is a:

- A) rectangle
- B) square
- C) trapezoid
- D) rhombus

6. The formula for the circumference of a circle is:

- A)  $\pi \times r^2$
- B)  $2 \times \pi \times r$
- C)  $2r$
- D)  $\pi \times d^2$

7. An angle measuring 135 degrees is:

- A) acute
- B) right
- C) obtuse
- D) straight

**8. A triangle with NO equal sides is:**

- A) equilateral
- B) isosceles
- C) scalene
- D) right

**9. The area of a circle with radius 5 (use  $\pi = 3.14$ ) is approximately:**

- A) 15.7
- B) 31.4
- C) 78.5
- D) 157

**10. All sides of a rhombus are equal. If one side = 8, the perimeter is:**

- A) 8
- B) 16
- C) 24
- D) 32

**SECTION 2: Matching (2 points each = 10 points)****COLUMN A (Terms)**

1. \_\_\_\_ Radius
2. \_\_\_\_ Equilateral triangle
3. \_\_\_\_ Supplementary angles
4. \_\_\_\_ Perpendicular lines
5. \_\_\_\_ Circumference

**COLUMN B (Definitions)**

- a. Half the diameter of a circle
- b. All three sides equal
- c. Two angles that sum to 180 degrees
- d. Lines that meet at a 90-degree angle
- e. The distance around a circle

**SECTION 3: Show Your Work (4 points each = 20 points)**

1. A triangle has angles 55 degrees and 72 degrees. Find the third angle. **SHOW YOUR WORK:**

2. Find the area of a rectangle with length = 14 and width = 6. **SHOW YOUR WORK:**

3. Find the circumference of a circle with diameter = 10 (use  $\pi = 3.14$ ). **SHOW YOUR WORK:**

4. A square has perimeter = 36. What is the length of each side and its area? **SHOW YOUR WORK:**

5. Find the area of a circle with radius = 7 (use  $\pi = 3.14$ ). **SHOW YOUR WORK:**



#### SECTION 4: Word Problems (20 points each = 60 points)

##### Problem 1. (20 pts)

A farmer has a rectangular field with length 30 m and width 20 m. He wants to build a fence around the entire perimeter and plant grass inside. (a) How much fencing does he need? (b) What is the area of the field?

##### Problem 2. (20 pts)

A circular swimming pool has a diameter of 12 feet. (a) What is the radius? (b) What is the circumference (use  $\pi = 3.14$ )? (c) What is the area (use  $\pi = 3.14$ )?

##### Problem 3. (20 pts)

A triangle has two equal sides of length 9 cm and a base of 5 cm. (a) What type of triangle is this? (b) What is its perimeter? (c) If the two base angles each measure 68 degrees, what is the top angle?



## Section 1: Multiple Choice

1. B

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## Section 2: Matching

1. Radius = a
2. Equilateral triangle = b
3. Supplementary angles = c
4. Perpendicular lines = d
5. Circumference = e

## Sections 3 & 4: Use professional judgment to award partial credit.

Award full points for correct final answer with clear work shown. Award half credit for correct process with a computation error. Deduct points for missing steps even when the answer is correct. Word problems: 20 pts = 8 setup + 8 work + 4 answer/label.