Aksum Math

Name: _____

Basic Geometry

Date: _____

Geometry · Grade 4

Score: _____ / 10

★ Hard · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. A rectangle has perimeter 40 cm.

What dimensions give the largest possible area?

Answer: _____

2. A square has perimeter 52 cm.

What is its area?

Answer: _____

3. Shape A: 10 cm × 8 cm rectangle.
Shape B: right triangle with base 10 cm and height 6 cm.
Combined area?

Answer: _____

4. A rectangular pool is 25 m × 12 m.
A 2 m wide path surrounds it.
Find the path area.

Answer: _____

5. A triangle has base = 3 × height and area = 54 cm².
Find the base and height.

Answer: _____

6. A farmer fences a rectangle with 60 m of fencing.
One side is 18 m.
Find: (a) the other side, (b) the area.

Answer: _____

7. A triangle has area 45 m² and base 15 m.
Find its height.

Answer: _____

8. A 60 cm × 40 cm painting has a 5 cm border added on all sides.
Total area including border?

Answer: _____

9. An L-shaped figure is made by joining a 10×6 cm rectangle to a 4×3 cm rectangle.
Find the total area.

Answer: _____

10. A rectangle has area 200 cm² and is twice as long as wide.
Find the dimensions.

Answer: _____

Answer Key

Basic Geometry — Hard

1. **10 cm × 10 cm (square), area = 100 cm²**

For a fixed perimeter, area is maximised when the shape is a square. 40÷4=10.

2. **169 cm²**

Side = 52÷4 = 13. Area = 13×13 = 169 cm².

3. **110 cm²**

Rectangle: 80 cm². Triangle: ½×10×6=30 cm². Total: 110 cm².

4. **164 m²**

Outer: 29×16=464 m². Pool: 300 m². Path: 464−300=164 m².

5. **Height = 6 cm, Base = 18 cm**

½×3h×h=54. 3h²/2=54. h²=36. h=6. Base=18 cm.

6. **(a) 12 m (b) 216 m²**

l+w=30. w=30−18=12. Area=18×12=216 m².

7. **6 m**

45 = ½×15×h. h = 90÷15 = 6 m.

8. **3,500 cm²**

Border adds 5 cm on each side: new length = 60+5+5 = 70 cm, new width = 40+5+5 = 50 cm. Area = 70 × 50 = 3,500 cm².

9. **72 cm²**

10×6=60. 4×3=12. Total: 60+12=72 cm².

10. **Width = 10 cm, Length = 20 cm**

w × 2w = 2w² = 200. w² = 100. w = 10. Length = 20 cm.