

**Practice Problems for Geometry**  
from [www.topmath.info](http://www.topmath.info)

1 A rectangle is 5 mm longer than it is wide. If its width is 9 mm, what is its perimeter?

2 (T/F): A parallelogram may contain four right angles.

3 A cake has an area of  $36\pi$ . If you slice the cake into 5 equal slices, what is the perimeter of one slice?

4 Equilateral pentagon ABCDE is inscribed in a circle of radius  $r$ . What is the length of arc BC?

5 (T/F): All parallelograms have exactly two lines of symmetry.

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6 Taking pi as 3.14, what is the volume of a cylinder with a base diameter of 3 yards and a height of 2 yards? Express your answer to the nearest cubic yard.

7 A 1-inch diameter sphere weighs 9.7 ounces. How many ounces would a 5-inch diameter sphere of the same material weigh?

8 (T/F): Every polygon is a heptagon.

9 (T/F): Two rays in the same plane that do not intersect must be parallel to one another.

10 (T/F): A ray has exactly two endpoints.

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11 What word describes an angle that measures exactly 90 degrees?

12 On a standard circular clock face, point A is on the 5, point B is the center of the clock, and point C is on the 12. What is the measure of angle ABC in degrees?

13 Two angles of an isosceles triangle measure 12 and 84 degrees. How many degrees is the third angle?

14 (T/F): Some, but not all equilateral triangles are scalene triangles.

15 (T/F): The angles of an obtuse triangle add up to more than the angles of an acute triangle.

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1 ANSWER: 46 mm. EXPLANATION: We know that the width (9 mm) is 5 mm shorter than the length, which must be 14 mm. Since the perimeter of a rectangle is twice its length plus its width, we add these two numbers together and multiply by 2 to get the answer.

2 ANSWER: True

3 ANSWER:  $12 + (12/5)\pi$ . EXPLANATION: The area of any circle is  $\pi$  times the square of the radius, so the radius ( $r$ ) of this particular circle is 6. Since each slice contains two radii as edges, the perimeter must be at least 12. The circumference of the circle, given by the formula  $2\pi(r)$ , is  $12\pi$ , and the curved edge of the slice contains  $1/5$  of this value.

4 ANSWER:  $2(\pi)r/5$ . EXPLANATION: The total circumference is  $2(\pi)r$ . Because the inscribed shape is an equilateral pentagon, arc BC is one fifth of that circumference.

5 ANSWER: False

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6 ANSWER: 14 cubic yards. EXPLANATION: The volume of a cylinder is  $\pi \times r^2 \times h$ . Plug in 3.14 for  $\pi$ , 1.5 for  $r$  (half the diameter), and 2 for  $h$  to get the answer.

7 ANSWER: 1212.5

8 ANSWER: False

9 ANSWER: False

10 ANSWER: False

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11 ANSWER: right

12 ANSWER: 150

13 ANSWER: 84

14 ANSWER: False. EXPLANATION: In an equilateral triangle, all three sides are the same length. In a scalene triangle, no two sides are the same length.

15 ANSWER: False. EXPLANATION: The angles of any triangle add up to exactly 180 degrees.