

Practice Problems for Geometry
from www.topmath.info

1 (T/F): Two lines in the same plane that do not intersect must be perpendicular to one another.

2 (T/F): If lines A and B are parallel, and B is perpendicular to line C, then A is parallel to line C.

3 Angles that add up to 180 degrees are called what?

4 Point C is the center of equilateral hexagon PQRSTU. What is the measure of angle RCT?

5 Two angles of an isosceles triangle measure 20 and 80 degrees. How many degrees is the third angle?

Practice Problems for Geometry
from www.topmath.info

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

7 (T/F): No equilateral triangle is a right triangle.

8 One angle of a triangle measures C degrees. The second angle measures $2C$ degrees, and the third angle measures D degrees. If C and D are both integers, and $C > 52$ degrees, how many possible values are there for D ?

9 A rectangle is 13 inches longer than it is wide. If its width is 8 inches, what is its perimeter?

10 (T/F): Every quadrilateral contains four right angles.

Practice Problems for Geometry
from www.topmath.info

11 A pizza has an area of 9π . If you slice the pizza into 6 equal slices, what is the perimeter of one slice?

12 Equilateral pentagon ABCDE is inscribed in a circle of radius r . What is the length of arc AC?

13 (T/F): An equilateral pentagon has exactly five lines of symmetry.

14 A 1-inch cube weighs 12 ounces. How many ounces would a 3-inch cube of the same material weigh?

15 A 1-inch diameter sphere weighs 5.7 ounces. How many ounces would a 3-inch diameter sphere of the same material weigh?

Practice Problems for Geometry
from www.topmath.info

1 ANSWER: False

2 ANSWER: False

3 ANSWER: supplementary

4 ANSWER: 120 degrees. EXPLANATION: Draw a line from each vertex of the hexagon to the center of the circle. This forms six angles at the center of the hexagon, and since the six angles combine to make 360 degrees, each angle is 60 degrees. Angle RCT is angle RCS plus angle SCT, so its measure is 120 degrees.

5 ANSWER: 80

Practice Problems for Geometry
from www.topmath.info

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

7 ANSWER: True. EXPLANATION: In an equilateral triangle, all three angles must have the same measure. Since the total of the angles in any triangle is 180 degrees, each angle must be 60 degrees, which is not a right angle.

8 ANSWER: 7. EXPLANATION: The total of the angles in a triangle is always 180 degrees. Since the first two angles add up to $3C$, we know that the largest possible value of C is 59 degrees, because if it were a larger integer, the total of the first two angles would not be less than 180 degrees. Since C must be larger than 52, that leaves only 7 possibilities for C , and hence D .

9 ANSWER: 58 inches. EXPLANATION: We know that the width (8 inches) is 13 inches shorter than the length, which must be 21 inches. 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.

10 ANSWER: False

Practice Problems for Geometry
from www.topmath.info

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

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

13 ANSWER: True

14 ANSWER: 324

15 ANSWER: 153.9