

Practice Problems for Geometry
from www.topmath.info

1 How many sides does a octagon have?

2 (T/F): No octagon is a polygon.

3 Points, Q, R, S, and T are points in order along a line. What is the intersection of ray RT and ray SQ?

4 How many degrees do supplementary angles add up to?

5 In Figure 1, the measure of angle EGF is 155° , and the measure of angle CEH is 37° . What is the measure of angle EBC?

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6 One angle of a right triangle measures 25 degrees. How many degrees is its smallest angle?

7 (T/F): Some, but not all right triangles are scalene triangles.

8 (T/F): No scalene triangle is an equilateral triangle.

9 (T/F): Some, but not all right triangles are acute triangles.

10 A rectangle is 7 cm longer than it is wide. If its length is 13 cm, what is its perimeter?

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11 (T/F): A parallelogram may contain exactly three right angles.

12 A track is a circle of radius D . What is the total distance covered by a person who goes 9 times around the track?

13 Equilateral pentagon $EFGHI$ is inscribed in a circle of radius r . What is the length of arc FG ?

14 (T/F): All quadrilaterals have exactly two lines of symmetry.

15 Taking π as 3.14, what is the volume of a cylinder with a base diameter of 6 meters and a height of 2 meters? Express your answer to the nearest cubic meter.

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1 ANSWER: 8

2 ANSWER: False

3 ANSWER: Line segment RS. EXPLANATION: The intersection is the portion of the line that is common to the two rays. The only common segment is the line segment from R to S.

4 ANSWER: 180

5 ANSWER: 12° . EXPLANATION: Angle EGH measures 25° , since it is the supplementary angle of angle EGF. The measure of angle GEH must be 143° , GEH and CEH are supplementary angles. Therefore, angle EHG must equal 12° , because EGH, GEH, and EHG add up to 180° (because they are the angles of a triangle).

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6 ANSWER: 25

7 ANSWER: True

8 ANSWER: True. EXPLANATION: Since all the sides of a scalene triangle have different lengths, a scalene triangle cannot be an equilateral triangle, where all three sides have the same length.

9 ANSWER: False. EXPLANATION: In an acute triangle, each angle must be less than 90 degrees. A right triangle has a 90 degree (right) angle.

10 ANSWER: 38 cm. EXPLANATION: We know that the length (13 cm) is 7 cm longer than the width, which must be 6 cm. 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.

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11 ANSWER: False

12 ANSWER: $9(\pi)D$. EXPLANATION: One lap around the track (the circumference) is $(\pi)D$. Multiply this by 9 to obtain the total distance.

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

14 ANSWER: False

15 ANSWER: 57 cubic meters. EXPLANATION: The volume of a cylinder is $\pi \times r^2 \times h$. Plug in 3.14 for π , 3 for r (half the diameter), and 2 for h to get the answer.