Practice Problems for Geometry
from www.topmath.info

1 George draws a circle of radius 12 cm inside a circle of radius 18 cm. What is the area between the two circles in square cm, if pi=3.14?

2 (T/F): Every circle has rotational symmetry.

3 A 1-centimeter cube has a mass of 9 grams. What would be the mass in grams of a 3-centimeter cube of the same material?

4 A 1-centimeter diameter sphere has a mass of 5.4 grams. What would be the mass in grams of a 2-centimeter diameter sphere of the same material?

5 (T/F): No polygon is a nonagon.

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6 Points A, B, C, and D are in that order on a line. The distance from A to C is 44 inches, from B to C is 17 inches, and from B to D is 36 inches. How long is it from A to D?

7 (T/F): A line segment has more than two endpoints.

8 In Figure 2, angle DAE measures x°, and angle DEC measures y°. What is the degree measure of angle EBC?

9 On a standard circular clock face, point A is on the 2, point B is the center of the clock, and point C is on the 11. What is the measure of angle BAC in degrees?

10 An isosceles triangle has sides that are 11 and 28 units in length. What is the perimeter of the triangle?

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11 A triangle with a base of 8 units has an area of 20 square units. What is the area of a second triangle that is similar to the first one, but has a base of 64 units?

12 The two short sides of a right triangle are 17 inches and 19 inches long. To the nearest inch, how long is the hypotenuse?

13 (T/F): All parallelograms are quadrilaterals.

14 (T/F): All squares are trapezoids.

15 The radius of a circle is 32 feet. How many feet long is its diameter?

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1 ANSWER: 565.2

2 ANSWER: True

3 ANSWER: 243

4 ANSWER: 43.2

5 ANSWER: False

6 ANSWER: 63 inches. EXPLANATION: Since the distance from A to C is 44 inches, and the distance from B to C is 17 inches, we can subtract to find that the distance from A to B must be 27 inches. Add this to the distance from B to D (36 inches) to get the distance from A to D.

7 ANSWER: False

8 ANSWER: y-x. EXPLANATION: Because AD and BC are parallel, angle ECB must have the same measure as angle DAE, or x°. Because angle DEC measures y°, CEB must measure 180-y degrees. Therefore, angle EBC must be 180 degrees minus the sum of angles CEB and BCE. Hence, the measure of angle EBC is 180 - [(180-y) +x], or y-x.

9 ANSWER: 45

10 ANSWER: 67 units. EXPLANATION: The longer side must be the one that has an equal side, because two 11 unit sides would not be long enough to form a triangle with a 28 unit side. Therefore, the total perimeter must be the sum of two 28 unit sides and one 11 unit side.

11 ANSWER: 1280 square units. EXPLANATION: The base of the second triangle is 8 times the base of the original triangle. Since the triangles are similar, the height of the second triangle must also be 8 times the height of the first triangle. Since calculating area involves mutliplying by base and height, the area of the new triangle must be 8 times 8 (64) times as large as the first triangle.

12 ANSWER: 25. EXPLANATION: By the Pythagorean Theorem, the length of the hypotenuse is the square root of the sum of the squares of the other two sides. The squares of the other two sides are 289 and 361 square inches. The sum of these two quantities is 650 square inches. The square root of this number is about 25 inches.

13 ANSWER: True

14 ANSWER: False

15 ANSWER: 64