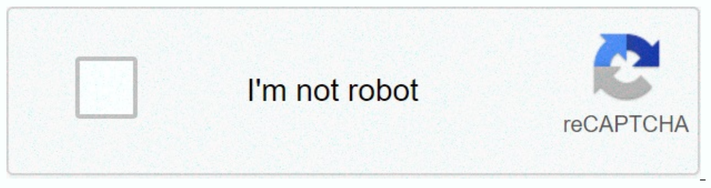

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Area of a semicircle and square

A semicircle is a semicircle. This means that a semicircle will have half the area of a circle. You might think that means it will have half the perimeter of a circle, but that is not true. To make a semi-circle, take any diameter of the circle. Remove half of the circle along this diameter. You have a semicircle (half a circle). A

semicircle is half the circumference of a complete circle plus the diameter of a cricle, d): Learn more about the radius, diameter and circumference of a circle in this lesson. Area of a semicircle The area of a semicircle is the space contained by the circle. The area is the number of square units surrounded by the sides of the shape. The area of a semicircle is always expressed in square units, depending on the units used for the radius of a circle. Area of a semi-circular formula The formula for the zone, A, of a circle is built around its radius. You find the area of a semicircle by plugging the given radius of the semicircle into the area of a semi-circle formula. The zone formula is as follows: To find the area of a semicircle with diameter, divide the diameter by 2 to find the radius, then apply the area of a semi-circle formula. How to find the area of a semicircle For example, the semicircle below has a radius of 19 cm. What is the area of the semicircle? To find his area, we replace r by the real value: A - Er22 A - π (192)2 A - π (361)2 A - 1134.1149472 A - 567.057 cm Area of a semi-circle example The Roman aqueduct in Barcelona, Spain is very old, dating from the first century of the common era. The aqueduct is almost gone, but it has semi-circular arches still visible on a wall in Barcelona. The arches are 2.96 metres in diameter. What is the perimeter and area of each arc? P - 2r P - π (1.48 m) - 2.96 m P - 4.649557 m - 2.96 m P - 7.609557 m Now, we find the area: A -22 A - π (1.48m2)2 A - 6.881344 m22 A - 3,440672 m2 Perimeter of a semicircle The perimeter of a half-circle is half the circumference of the original circle, C, plus the diameter, of. Since the semicircle has a right side, its diameter, we cannot describe the distance around the shape as the circumference of a semicircle; It's a perimeter. How to find the perimeter of a semicircle Remember that the formula for the perimeter (circumference), C, of a radius circle, r, is: C - 2 or C -d To find the perimeter, P, a semi-circle, you need half the circumference of the circle, plus the diameter of the semicircle: P - 12 (2) - d The 12 and 2 cancel each other , so you can simplify to get this perimeter of a semi-circular formula. The perimeter of the Formula P Semicircle - using the property of of equality, you can also replace the diameter with a radius everywhere: P - 12 (2) - 2r P - 2r Find the perimeter of a semi-circle Examples Let's try an example. A semicircle semicircle has a diameter of 100 metres. What's the perimeter? P - 12 (d) - D P - 12 (π × 100) - 100 P - 12 (314.159265) - 100 P - 157.079632 - 100 P - 257.08 meters It is good to round the decimals as we have done here. Let's take an example using the radius of a semicircle. A semicircle has a radius of 365 inches. What's its perimeter? P - 2r P - π(365) - 2(365) P - 1,146,681318 - 730 P - 1,876.68 inches If the question asks you to convert your answer into units such as feet or yards, convert it; otherwise leave it in the original linear units. Round your answer to any decimal value that the problem requires. The semicircles at both ends of an NBA basketball court indicate the regulated areas under each basket. The semicircles have a four-foot radii. What is the perimeter of a semicircle in a restricted area? P - 2r P - π (4') - 2(4') P - 12.56637' - 8' P - 20.56637' In this case, having a measurement at 100,000ths of a foot is not necessary; 20.57' is a reasonably precise answer. Angle inscribed in a semicircle The angle inscribed in a semicircle is always 90 degrees. The inscribed angle is formed by drawing a line from each end of the diameter at any point on the semicircle. No matter the point about the length of the arc, the angle created where your two lines meet the arc will always be 90 degrees. The two end points of the diameter of the semicircle and the angle inscribed will always form a straight triangle inside the semicircle. Next lesson: Circle Instructor Sector: Malcolm M.Malcolm holds a master's degree in education and holds four teaching certificates. He has been a teacher in a public school for 27 years, including 15 years as a math teacher. 1 Find the radius of the semicircle. You'll need the radius to find the area of the semicircle. Let's say the radius of the semicircle is 5 centimeters (2.0 in). If you are only given the diameter of the circle, you can halve it to get the radius. For example, if the diameter of the circle is 10 centimeters (3.9 inches), then you can divide it by 2 (10/2) to get 5 centimeters (2.0 inches) as a radius. [2] 2 Find the area of the entire circle and divide it in half. The formula for finding the area of a complete circle is er2, where r represents the radius of the circle. Since you find the area of a semicircle, you will look for half the area of a circle,[3] which means that you have to use the formula to find the area of a semicircle and then divide it by two. Thus, the formula you will need to use to find the area of a semicircle is 2/2. Now, just plug 5 centimeters (2.0) into the formula to get your answer. You can either use the most to π with your calculator, replace 3.14 with π, or simply leave the symbol in place. Here's how you do it: Zone -2/2 Zone (π x 5 cm x 5 cm)/2 Zone x 25 cm2)/2 Zone - (3.14 x 25 cm2)/2 Zone - 39.25 cm2 3 Don't forget to indicate your answer in squared units. Since you find the area of a shape, you will need to use square units d (like cm2) in your response to indicate that you are working with a two-dimensional object. [4] If you calculate the volume, then you will work with cubic units (such as cm3). Add a new question Question How can I find the area of a circle? Multiply pi by the square of the radius. Question Should I follow PEMDAS in the formula? You don't have to worry about PEMDAS, because the formula only involves multiplication and division. Question What is the area of a semicircle with a radius of 1.4 m? Given a radius of circle - 1.4 m. As we know, the area of semicircle (pie) /2(3.14-1.4-1.4)/(2)-3,078 square m. Question How do you find the radius of a semicircle when you have the perimeter? This question uses the concept of circumference rather than zone, so be sure to read about calculating the circumference of a circle. To find the perimeter radius, you should know that the perimeter (also called circumference when you speak of a complete circle) of a complete circle is given by 2 'pi'r. Since we need the perimeter of a semicircle instead of a full circle, divide it by 2 (since the length of the arc is half) but then add the diameter, which is twice the radius (to account for the right part through the bottom). Thus, the perimeter of a semi-circle - (2-ft)/2-2-2--2-square-foot-- Solve for r /perimeter /(2 ft), and you have your radius! Question Why do we have to divide it by 2? Because semi means half. Question What is the perimeter if the diameter of the semicircle is 12 cm? If you ask about the circumference of a semicircle (the length of the arc), the circumference of a full circle is pi multiplied by the diameter, so that the circumference of a semicircle would be half that. Question If the area of a semicircle is 25.12 square meters, what is the diameter? First multiply the zone by 2. Then divide by ft. Then take the square root. Then double that number and you get the diameter in meters. Question What if there is no given number, and I'm supposed to just find the circle area with no idea? If you don't know the radius, diameter or circumference, you can't find the area. Question What is the size of a semicircle? The area of a circle is 2, where the radius of the circle is located. The area of half the semicircle is one quarter of it. Question How can I find the total perimeter of an object that measures 3cm, 5cm, 7cm, 2cm, 10cm and 7cm? If the values you have are the steps from the sides, you just need to add them. View more answers Ask a question Thanks! Every day at wikiHow, we work hard to give you access to instructions and information that will help you live a better life, whether it's keeping you safer, healthier or improving your well-being. In the middle current public health and economic crises, when the world changes radically and we all learn and adapt to changes in daily life, people need wikiHow more than ever. Your support helps wikiHow create more in-depth illustrated articles and videos and share our trusted brand of educational content with millions of people around the world. Please consider making a contribution to wikiHow today. wikiHow is a wiki, similar to Wikipedia, which means that many of our articles are co-written by several authors. To create this article, 36 people, some anonymous, worked to modify and improve it over time. This article has been viewed 636,314 times. Co-authors: 36 Update: September 1, 2020 Views: 636,314 Categories: Area volume and printing calculation Send fan mail to authors thanks to all authors for creating a page that has been read 636,314 times. Kiersten N. asked - 27/10/19 Find the area of the given figure. The figure is a semicircle adjacent to a square. The square has sides 32 cm long. 1 Expert response If the semicircle is adjacent to the square, it means that the semicircle has a diameter equal to the length of the square, which is 32 cm. The formula for the area of a circle is pi times the radius squared. Because the diameter of the semicircle is 32, the radius is half that, or 16. Thus, the area of the semicircle is 16-2, or 256, once ft. Finally, because a semicircle is half a circle, we have to divide that area by 2. So our area is 128 times square centimeters. Square.

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