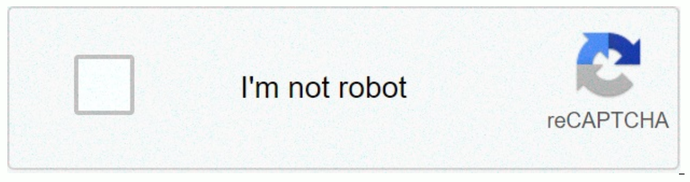

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How to find the area of irregular shapes step by step

5.1 Example 1 5.2 Example 2 A common problem for a surveyor is the calculation of the surface area of a farmer's field. The fields are often irregular which makes direct calculation of their areas difficult. In such cases, fields are divided into a number of common areas (triangles, rectangles, etc.), of which the surfaces can be calculated with simple formulas. All areas are calculated separately, and the sum of these areas provides the total area of the field. 5.1 Example 1 Figure 29 shows a field with an irregular shape that the surface area must be determined by. Figure 29 An irregular form field The procedure to be followed is: Step 1 Make a rough sketch of the field (see Fig. 29a) that specifies the corners of the field (A, B, C, D, and E) and the field borders (straight lines). In addition, some great landmark! is indicated (roads, ditches, houses, trees, etc.) that can help locate the field. Fig. 29a A rough sketch of the Step 2 field, as indicated on the sketch, in areas of common shapes. In this example, the field can be divided into 3 triangles ABC (base AC and height BB,), AEC (base AC and height EE1) and CDE (base EC and height DD1) (see Fig. 29b). Fig. 29b Division of the field into areas of common shapes Step 3, on the field, corners A, B, C, D and E with plugs. Step 4 Put out all the poles on lines AC (base of triangles ABC and AEC) and EC (bottom of triangle EDC) (see fig. 29c) and measure the distances to AC and EC. Fig. 29c Note the corners with plugs and insert spacer rods Step 5 Set out line BB (triangle height ABC) perpendicular to the base line AC (see Fig. 29d) using one of the methods described in chapter 4. Measure the distance BB, Fig. 29d Insert line BB perpendicular to AC Step 6 Similarly, the height EE, of triangle AEC and height DD, of triangle CDE inserted and measured (see fig. 29e) Fig. 29e Replace line DD1 perpendicular to EC and line EE1 perpendicular on AC Step 7 The base and the height of the three triangles are measured. The final calculation can be done as follows: Measured Triangle ABC: base = AC = 130 m height = BB1 = 55 m Triangular ACE: base = AC = 130 m height = EE1 = 37 m Triangular CDE: base = EC = 56 m height = DD1 = 55 m Answer range = 0.5 x base x height = 0.5 x 130 m x 55 m = 3,575 m2 Area = 0.5 x 130 m x 37 m = 2,405 mArea = 0.5 m x 56 m x 55 m = 1,540 m² Field ABCDE : Triangle area ABC = 3,575 m2 Triangle ace = 2,405 m2Area triangle CDE = 1,540 m2 Total area = 3,575 m2 + 2,405 m2 + 1,540 m2 = 7,520 m- = 0.752 ha5.2 Example 2 Area of the surface area of the field shown in Fig. 30 must be determined at some point that the field is covered by a high crop (e.g. corn or sugar cane). Fig. 30 A field covered by a high crop The field can be divided into two triangles ABD and BCD (see Fig. 31a). Unfortunately, due to the high crop, put out and measure the base BD and the two heights AA1 and CC1 are impossible. Fig. 31a Field sharing in two triangles In this case, the ABD triangle area can be calculated using AD as the base and BB1 as the corresponding height. BB1 can be set out and measured outside the cropped area. Similarly, triangle BCD can be calculated using base BC and corresponding height DD1 (see Fig. 31b). Fig. 31b Determination of the areas of the two triangles The procedure for following the field is: Step 1 the 4 corners (A, B, C and D) with its reaching poles. Step 2 Line AD is set out with range bars and extended behind A. Line f.Kr. is also deployed and extended behind C (see Fig. 32a). Measure the distances AD (base of triangle ADB) and BC (bottom of triangle-BCD). Fig. 32a Measuring the bases of the two triangles Step 3 Replace line BB1 (the height of the triangle ABD) perpendicular to the extended base line AD using one of the methods described in chapter 4. Similarly, line DD1 (triangle height f.Kr.) is put out perpendicular to the extended base line BC (see Fig. 32b) Measure the distance BB1 and DD1. Fig. 32b Measuring the heights of the two triangles Step 4 The base and height of both triangles have been measured. The final calculations can be done as follows: Measured Triangle ABD: base = AD = 90 m height = BB1 - 37 m Triangle BCD: base = BC = 70 m height = DD1 - 50 m Answer range = 0.5 x base x height = 0.5 x 90 m x 37 m = 1 665 m2 Area = 0.5 x 70 m x 50 m = 1,750 m2 Field ABDC: Area edge ABD = 1,665 m² Area edge BCD = 1,750 m2 Total area = 1,665 m2 + 1,750 m2 = 3,415 m2 = 0.3415 ha = approx. 0.34 ha instead of calculating each triangle by hand, you can save yourself some effort using a spreadsheet. I've attached an example in OpenOffice and Excel formats. All you have to do is add values of a,b and c for each triangle, and it will calculate ranges and give you a total. Edit: I have included versions of the worksheet, which have all but a,b and c cells protected. There is no password and it is up to individuals if they want the normal or protected versions. :)To make it a little clearer, the protected versions only prevent you from accidentally deleting or changing the formulas, but they only go up to 30 triangles. The regular versions should allow people to adjust the worksheet if they want. You can thank sonogo for this good proposal. Switch Nav In reality, the numbers are often irregular shapes - a little messy. Think of your messy bedroom again - is it a perfect rectangle? The trick: break these shapes into shapes that you know well (and whose area you know how to find).1. Find the area in this room: This can be done in two different ways:Method #1 Method #2 Split the shape into two rectangles and find all missing lengths. The larger rectangle has an area of the Smaller Rectangle has an area of If we these we will find the total range: Draw two lines to make the shape into one large rectangle. However, the area of the large rectangle is not included in our original figure, so we need to take out the area of the white rectangle()2. Find the area of this part of a basketball court: This number is already divided into two forms: a rectangle and a half circle. We need to find the area for each of them and put them together.3. A 6 meter x 12 meter swimming pool is surrounded by a terrace 2 meters wide. How many square meters decking is necessary to do this? As always, we want to draw a picture of what this looks like. The dimensions of the large outer rectangle are:So, the area of larger rectangle is . This amount includes the area of the pool, which we do not want to have decking. So pull out the area of the pool (). The amount of decking we need is: ! Come with us today and never see them again. By entering your email address, you agree to receive emails from Shmoop and confirm that you are over the age of 13. Sophia's self-paced online courses are a great way to save time and money as you earn credits eligible for transfer to many different colleges and universities.* Start free trial No credit card required 1. Find all the missing sides of the irregular shape by either: - compare parallel sides - break the shape down into smaller shapes 2. Find the sum of all the outer edges. Step-by-step examples of how to find the perimeter of irregular shapes. 1. Break down the irregular shapes into smaller shapes. 2. Find the edges of the smaller shapes. 3. Calculate the area of each small form. 4. Add all the areas to the small shapes (the sum will be the area of the irregular shape). How to find the area of irregular forms? Remember that the entrance can only be in foot (ft), inches (i), meters (yd), centimeters (cm), millimeters (mm) and meters (m), but never a combination of two different units!. . If you have inputs in different units of measure. See the conversion table below. Area = b × h Common shape: The sides and angles of common shapes are all the same. Irregular shape: The sides and angles of an irregular shape can be of any length and size. Now that we know the difference between ordinary and irregular forms. Let's make the calculation process easy by dividing the irregular shape into ordinary forms. Check the example below, here we have divided the shapes into triangles which is a common shape. Then you can easily calculate the range of each triangle using Heron's formula. After calculating the area of each triangle, just add them all to find the area of an irregular shape. Step 1: Measure all sides of the area in one unit (Feet, Meters, Inches or something else). Step 2: Enter the length of horizontal pages in length 1 and length 2. And the width of the vertical sides in width 1 and 2. (See picture above). Step 3: Press the Calculate button. The output our calculator provides is independent of the unit of measurement. For example, if you have entered values in feet. The exit will always be in your feet. Spring Formula: Area = b × h Abbreviations of unit area: Ft2 = Square Meter In2 = Square Inches Yd2 = Square Yards Cm2 = Square Centimeters Mm2 = Square millimeters M2 = Square meter Step 1: Determine all sides of irregular shape, Make sure all sides are in the same unit. Step 2: Draw the area of a piece of paper using the goals you achieved. Remember that the drawing should be scaled. Step 3: Divide the drawing into different shapes. The simple ones are Square and rectangle, circles and triangle can be a little tricky. Step 4: Calculate the area for each form using our Square footage calculator. For rectangles and squares, multiply the width by height. For triangles multiply the base by height and then divide by 2. For circles, multiply the radius space by 3.14 (pi). The radius of a circle is the distance from the center point to another point on the edge of the circle. Step 5: Add the areas to all the individual shapes to find the total square meter. Our Formula: Area = b × h Conversion Factors: To convert between square meters, squares, square meters, square meters and square meters you can use the following conversion table. Square meters to yard multiply ft2 by 0.11111 to get yd2 Square Square to meters multiply ft2 by 0.092903 to get m2 Square yards to square meters multiply yd2 by 9 to get ft2 Square yards to square meters multiply yd2 by 0.0 836127 to get m2 square meters to square meters multiply m2 by 10.7639 to get ft2 square meters to square meters multiply m2 by 1.19599 to get yd2 square meters to square kilometers multiply m2 value by 1000000 to get mm2 square meters to square centimeters multiply the m2 value by 10,000 to get cm2 square centimeters to square meters multiply the cm2 value by 0.0001 to get mm2 square centimeters to square millimeters multiplying cm2 value by 0.0001 to get mm2 square centimeters to square millimeters multiplying cm2 value by 0.0001 to get mm2 square centimeters to square millimeters multiplying cm2 value by 0.0001 to get mm2 square centimeters to square millimeters multiplying cm2 value by 0.0001 to get mm2 square centimeters to square millimeters multiplying cm2 value by 0.0001 to get mm2 square centimeters to square millimeters multiplying cm2 value by 0. 100 to get mm2 square millimeters to square centimeters multiply the mm2 value by 0.000001 to get cm2 square millimeters to square meters multiply mm2 value by 1000000 to get m2 m2