
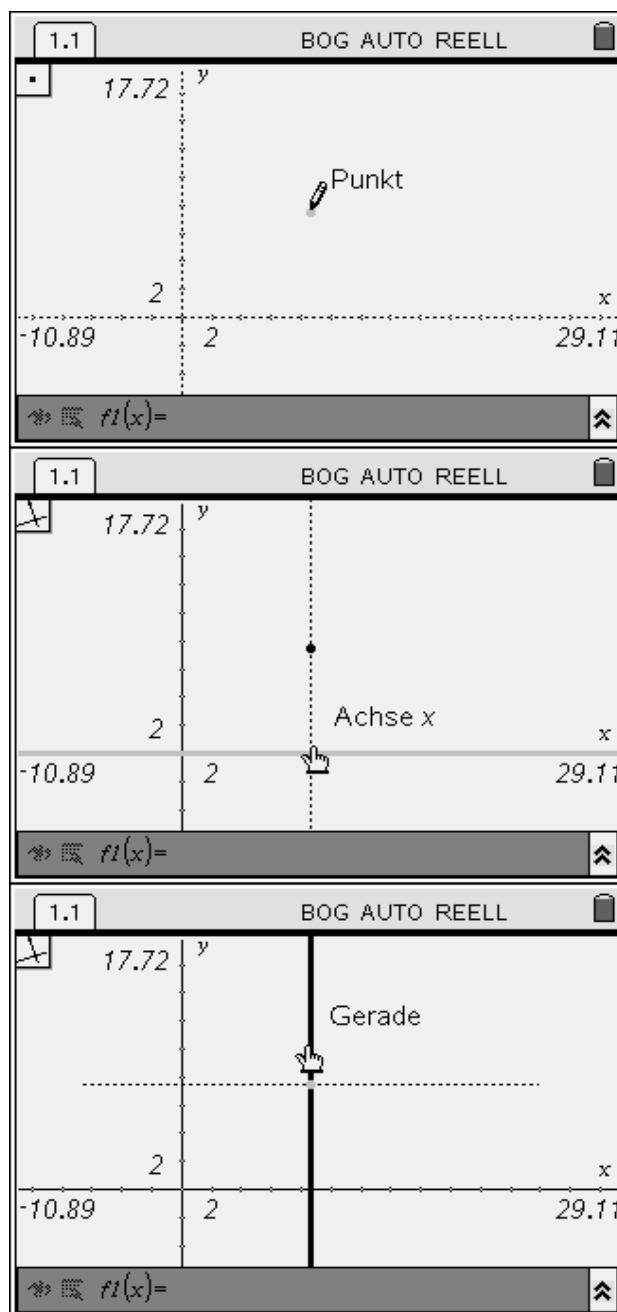


Example 2: chicken fence

Graphical solution – long version

Start the application **Graphs & Geometry**.
Construct a point in the first quadrant [(menu), 6:
Points & Lines, 1: Point].

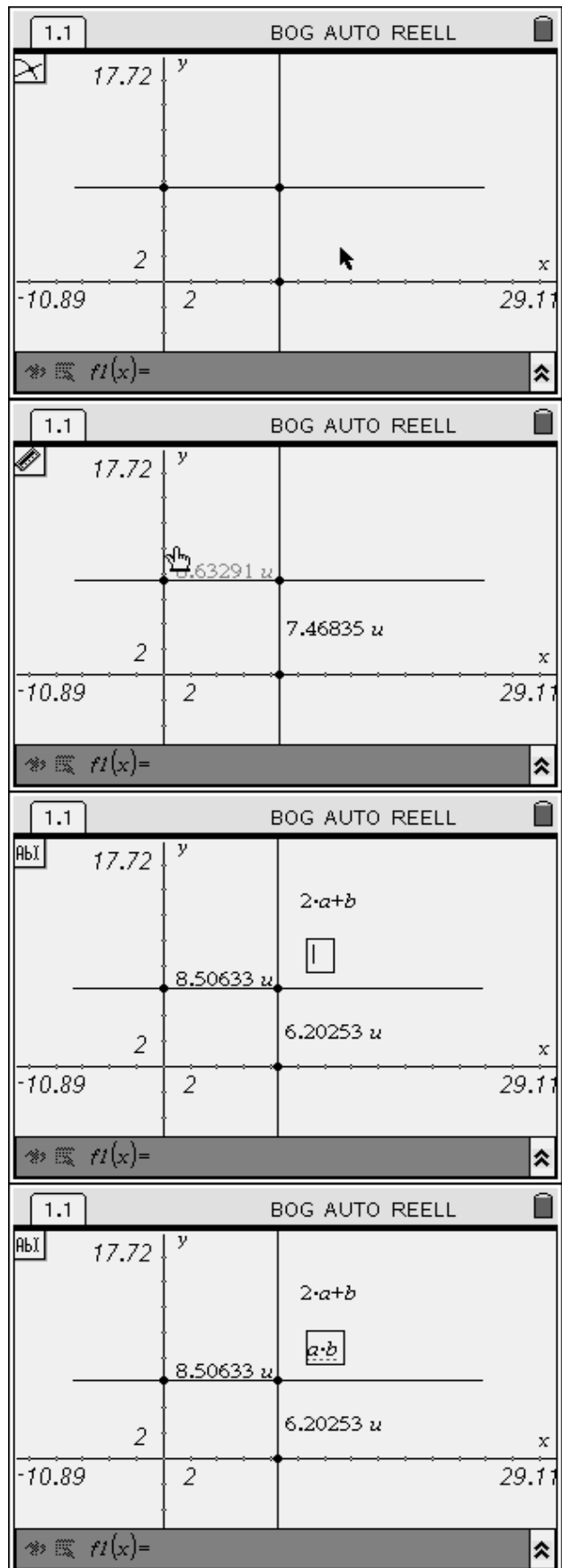
The rectangle will be constructed with the
help of perpendicular lines [(menu), 9:
Constructions, 1: Perpendicular]. After
selecting the option **perpendicular** click  in each case on the point and on one of the
axes.





After that construct the intersection points of the perpendicular line with the coordinate axes [menu, 6: Points & Lines, 3: Intersection Point(s)] by clicking on the intersecting objects (Point, Intersection points).

Measure the length of the sides of the resulting rectangle: [menu, 7: Measurement, 1: Length], then click on the points one after another.

Enter the two formulas $2 \cdot a + b$ (to calculate the length of fence) and $a \cdot b$ (to calculate the reserve area) [menu, 1: Actions, 6: Text]. Place your text with .




Now the values of the formulas should be calculated. Therefore enable the calculation [menu, 1: Actions, 8 Calculate] and select the variables one after another. Place the result of the computation with .

Grab the corner which you constructed right at the beginning (click on the point  and hold it a little longer than one second) and set the length of the fence at 10. This will not succeed exactly. The accuracy can be improved by changing the settings and increase the coordinate axes (e.g. [menu, 4: window, 1: dialog box setting of the axis]) The number of displayed decimal places can be changed with the help of the option attributes [ctrl, menu, 2: Attributes].

Now lock the fence length:

[menu, 1: Actions, 3: Attributes] go to the bolt with the cursor keys and close it.

Grab the corner which you constructed right at the beginning (click on the point  and hold it a little longer than one second) and find the maximum of the area. Here it was determined with 12,45.

You wouldn't find 12,5 because the periphery was not set exactly. Depending on the aims in the lessons you can take this as an opportunity to pay attention to other approaches.

