

changes (dashed line) as the user changes the values of the four parameters using the sliders in the top left corner as shown in the Fig.8.

In contrast to Excel, the preparation of sliders in GeoGebra is easier. It is because GeoGebra allows the minimal value of a slider to be also negative and the value of the increment can also be a decimal number. That is very convenient, because the user may directly set the desired values and no transformation of values is needed.

Fig.9 shows the graph of the function of two variables created in GeoGebra. The graph of the function $z = px^2 + qy^2$ depends on two parameters p and q , so, in order to change their values, two sliders are available.

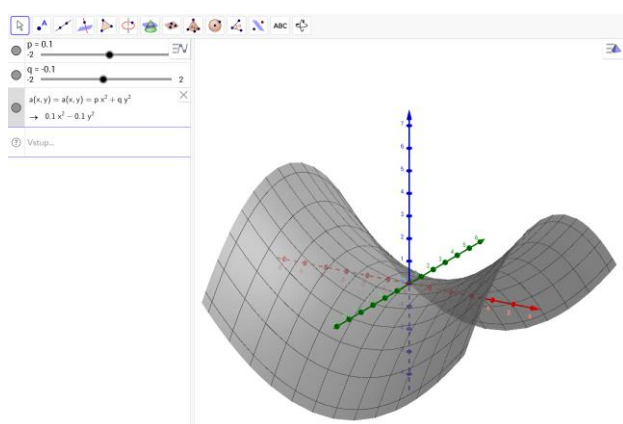


Fig.9 – Graph of the function $0.1x^2 - 0.1y^2$ (hyperbolic paraboloid) in GeoGebra

Similarly to Mathematica and Excel, in GeoGebra it is possible to shift and rotate the graph and it is also available to change some of its properties, like color, shading, opacity etc.

4 Conclusion

The article provides an overview of some possibilities to display the graph of a function of one variable or of two variables. Of course, it is impossible to count all possibilities, so four main types were discussed, namely: applets free of

charge, special commercial software, widely used commercial software and software free of charge.

The aim of the article was to point out the available software, certainly not to rate which one is better or worse. Some software enables to create the graph very quickly with no previous knowledge of programming. Some other requires programming skills. On the other hand, the output may also vary from a static curve to an interactive colorful picture.

The choice of which product to use depends on the user and circumstances. To see the graph just because to have an idea of the shape or trend, probably the simple applet will be used. Should the properties of the function be explored in more detail, then, certainly, the use of a more sophisticated software will be considered.

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