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NOTES:

* With sumpy the result inludes the imginary and real roots, however in assignment I only found the **real roots and plotted them**.
* To plot the derivatives use the **plot\_all** function that take **get\_derivatives** returned value (**deri**) as a parameter.
* Sympy cannot show the graph for the **function = constant**, for 3D that is a plane.

Q1.

1. Plot of function with critical points:

Chart, surface chart

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Derivatives** | | | | |
|  |  |  |  |  |
|  |  |  |  | The graph is plane in 3 dimension where the value of function |

1. Plot of function with critical points:

Chart, surface chart

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Derivatives** | | | | |
|  |  |  |  |  |
|  |  |  |  |  |

1. Plot of function with critical points:

Chart, surface chart

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Derivatives** | | | | |
|  |  |  |  |  |
|  |  |  |  |  |

Q2.

1. Plot of function with critical points:

Chart

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Derivatives** | | | | |
|  |  |  |  |  |
|  |  |  |  |  |

1. Plot of function with critical points:

Chart, surface chart

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Derivatives** | | | | |
|  |  |  |  |  |
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1. Plot of function with critical points:

Chart, surface chart

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Derivatives** | | | | |
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