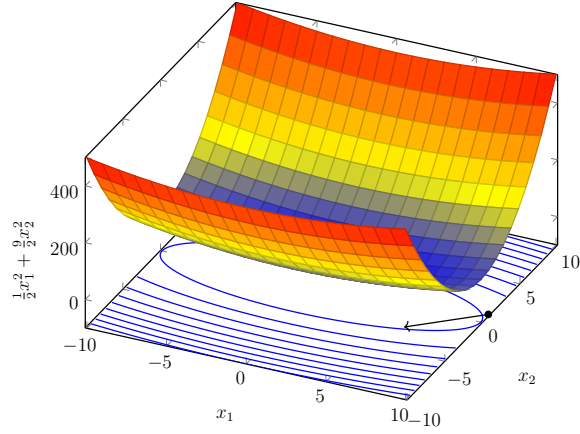


List of Figures

1	Function, level curves and iteration (Gnuplot)	2
---	--	---



```

\begin{tikzpicture}[scale=0.6]
  \begin{axis}[
    width=12cm,
    view={25}{45},
    enlargelimits=false,
    grid=none,
    domain=-10:10,
    y domain=-10:10,
    xmin=-10.1,
    xmax = 10.1,
    zmin=-100,
    zmax=500,
    samples=21,
    xlabel=$x_1$,
    ylabel=$x_2$,
    thick,
    zlabel={$\frac{1}{2} x_1^2 + \frac{9}{2} x_2^2$}
  ]
    \addplot3[no markers,
      blue,
      raw gnuplot,
      z filter/.code={\def\pgfmathresult{-100}},
      mesh=false
    ] gnuplot {
      set contour base;
      set nosurface;
      set cntrparam levels 15;
      set isosamples 100;
      set samples 50;
      splot [-10:10][-10:10] 0.5 * x * x + 4.5 * y * y ;
    };
    \addplot3[surf] {0.5 * x * x + 4.5 * y * y} ;
    \addplot3[mark=*, coordinates {(10,1,-100)}];
    \draw[thick,->] (axis cs:10,1,-100) -- (axis cs:6.284,-2.345,-100) ;
  \end{axis}
\end{tikzpicture}

```

Figure 1: Function, level curves and iteration (Gnuplot)