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In[25]:= a = {{4, 3}, {3, 4}, {2, -2}}; b = {1, 7, -2};
{u, w, v} = SingularValueDecomposition[a]
u.w.Transpose[v]
Clear[x, y]; r = Thread[a.{x, y} == b];
f[x_] := If[x == 0, 0, 1/x]; SetAttributes[f, Listable];
w1 = f[Transpose[w]]
xx = v.w1.Transpose[u].b
d = 5;
ContourPlot[Evaluate[r], {x, -d, d},
  {y, -d, d}, Epilog -> {Red, PointSize -> Large, Point[xx]}]

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Out[26]= {{{{1/sqrt(2), -1/(3*sqrt(2)), -2/3}, {1/sqrt(2), 1/(3*sqrt(2)), 2/3}, {0, -2*sqrt(2)/3, 1/3}},
  {{7, 0}, {0, 3}, {0, 0}}, {{1/sqrt(2), -1/sqrt(2)}, {1/sqrt(2), 1/sqrt(2)}}}

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Out[27]= {{4, 3}, {3, 4}, {2, -2}}

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Out[30]= {{{1/7, 0, 0}, {0, 1/3, 0}}}

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Out[31]= {-13/63, 85/63}

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