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```
69 alpha = 0.1
70 nStop = 40
71 xhist, Jhist = gd.gradient_descent(J1, xstart, alpha, nStop, verbose=True, pdict=pdict)
72 print(f"In run_test1: (xopt, yopt) = ({xhist[-1,0]:.2e}, {xhist[-1,1]:.2e}), Jmin = {Jhist[-1]
73
74 # Set up linearly spaced points in x and y for evaluating objective function
75 Nx = 101
76 Ny = 101
77 bx = np.linspace(-1., 1., Nx)
78 by = np.linspace(-1., 1., Ny)
79 f = np.zeros((Nx, Ny))
80
81 ##### BEGIN SOLUTION #####
82 xy = np.zeros(2)
83 for j in range(len(bx)):
84     for i in range(len(by)):
85         xy[0], xy[1] = bx[j], by[i]
86         f[i,j] = J1(xy, pdict)[0]
87 fig, axs = plt.subplots()
88 cs = axs.contour(bx, by, f) #, cmap='RdGy')
89 axs.clabel(cs)
90 axs.set_xlabel('x')
91 axs.set_ylabel('y')
92 for x, y in xhist:
93     axs.plot(x, y, marker='o', color='green')
94 axs.plot(x, y, marker='o', color='magenta')
95 ##### END SOLUTION #####
96 return axs, cs
97
```

