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# [sagemath グラフ] 検索
#https://doc.sagemath.org/html/ja/tutorial/tour_plotting.html より
# quit;

c = circle((0,0), 1, rgbcolor=(1,1,0));
c.show(); # message を object c へ送る. show(c)

plot(x^2, (x, 300, 500))

x = var('x')
parametric_plot((cos(x), sin(x)^3), (x, 0, 2*pi), rgbcolor=hue(0.6))

x, y = var('x, y')
plot3d(x^2 + y^2, (x, -2, 2), (y, -2, 2))

# Whitney umbrella
u, v = var('u, v')
fx = u*v
fy = u
fz = v^2
parametric_plot3d([fx, fy, fz], (u, -1, 1), (v, -1, 1), frame=False, color="yellow")

## いじわるテスト
plot(sin(x), (x, -100, 100))
plot(sin(x), (x, -300, 300))
plot(sin(x), (x, -300, 300), plot_points=3000)

## 例題, 与えられた点からグラフを描く.
r = [(1, 1), (2, 4), (3, 9)]
list_plot(r, plotjoined=True, color='purple')

x, z = var('x, z') # これがないとplot3d がエラー
plot3d(sin(x-z), (x, 0, float(2*pi)), (z, 0, float(2*pi)))
```