

Class # 29 - Fri Nov 5

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Today :

- "Circles" example (C+S!)
- "Nonlinear Systems"
(cont'd from yesterday)

→ #1 + #2 : Tuesday in class

③ ← #4 : today
#5 : extra credit

rewrite a
given equation
(for a circle)
in "standard form"

Circles #3

Given: $[x^2 - 8x + \underline{\quad}] + [y^2 + 16y + \underline{\quad}] + 64 = -64$

Step 1: Move constant term to ~~RHS~~ RHS.

Step 2: CtS!! (and add those #'s to RHS too!!)

$$\left[x^2 - 8x + \frac{16}{\downarrow} \right] + \left[y^2 + 16y + \frac{64}{\downarrow} \right] = -64 + 16 + 64$$

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{-8}{2}\right)^2 = 16$ $c = \left(\frac{16}{2}\right)^2 = 64$

Step 3: Factor the resulting "perfect square trinomials" (quadratics).

$$(x-4)(x-4) + (y+8)(y+8) = 16$$

$$\boxed{(x-4)^2 + (y+8)^2 = 16}$$