H. Geom./HAP Ch 2.4 Name: Block: Seat:

HAP 2.4 Circle Equations

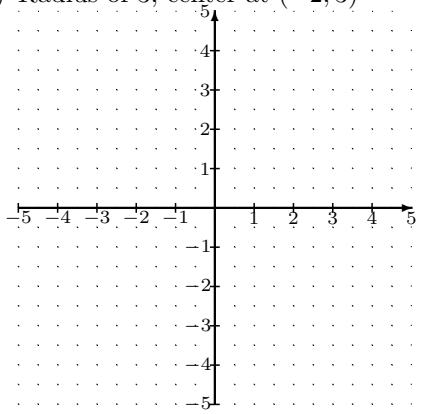
Equations of a circle with ceter at (h, k) with radius r:

- Standard Form:

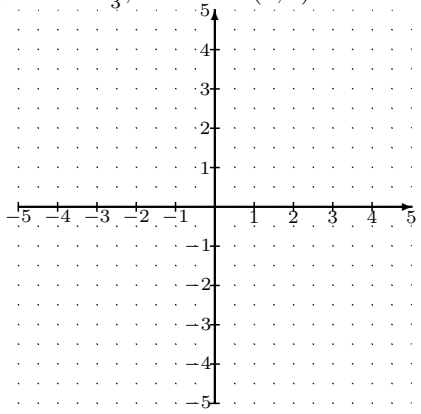
- General Form:

1. Write the 1.) standard form equation, 2) the general form equation and 3) graph each circle

   (a) Radius of 3, center at $(-2, 3)$



   (b) Radius $\frac{2}{3}$, center at $(0, 0)$

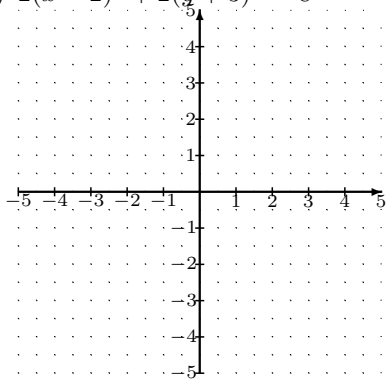


Answers:

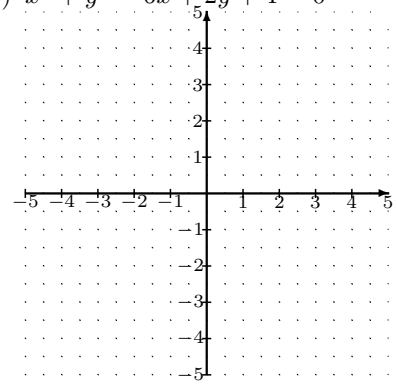
(1a) $(x+2)^2+(y-3)^2=9$ and $x^2+y^2+4x-6y+4=0$ (1b) $x^2+y^2=4$ and $x^2+y^2-4=0$

(2a) Center $(2,-3)$; $r=2$ (2b) Center $(3,-1)$; $r=6$ (3a)$(x-2)^2+(y+3)^2=52$ (3 b) $(x-1)^2+(y-3)^2=74$

2. Find the center (h, k) and radius r and graph each circle:
   (a) $2(x-2)^2 + 2(y+3)^2 = 8$



   (b) $x^2 + y^2 - 6x + 2y + 4 = 0$



3. Find the general form of the equation of each circle.
   (a) Center $(2, -3)$ and containing the point $(0, 4)$

   (b) Endpoints of a diameter at $(6, 10)$ and $(-4, -4)$