CIRCLE

STANDARD FORM

$(x-h)^2+(y-k)^2=r^2$

CENTER: (h,k)

RADIUS: r

#5 CENTER $(-2,-4)$ $r=\sqrt{3}$

$h=-2$ $k=-4$

$(x-h)^2+(y-k)^2=r^2$

$(x-(-2))^2+(y-(-4))^2=(\sqrt{3})^2$

$(x+2)^2+(y+4)^2=3$

#6 $(x+2)^2+(y-3)^2=16$

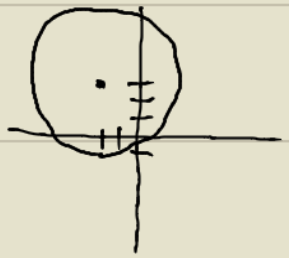
$+2$ → OPP SIGN → $h=-2$

-3 → OPP SIGN → $k=3$

16 → TAKE SQRT OF THIS NUMBER → $r=\sqrt{16}$, $r=4$

CENTER: $(h,k)=(-2,3)$

RADIUS $=4$



#7 $x^2+(y+4)^2=1$

$(x+0)^2+(y+4)^2=1$

$+0$ → $h=0$

$+4$ → $k=-4$

1 → $r=\sqrt{1}$, $r=1$

CENTER $=(h,k)=(0,-4)$

RADIUS $=r=1$

#8

$x^2+y^2-8x-16y+76=0$

STEP 1: DIVIDE EVERYTHING BY THE NUMBER IN FRONT OF THE x^2

STEP 2: GROUP x'S TOGETHER, GROUP y'S TOGETHER, TAKE NUMBER TO RIGHT SIDE

$x^2-8x+y^2-16y=-76$

STEP 3: COMPLETE THE SQUARE ON x'S, COMPLETE THE SQUARE ON y'S

$x^2-8x+16+y^2-16y+64=-76+16+64$

$(x-4)^2+(y-8)^2=4$

-4 → $h=4$

-8 → $k=8$

4 → $r=\sqrt{4}$, $r=2$

C: $(4,8)$, $r=2$

$(-8\cdot\frac{1}{2})^2$ $(-16\cdot\frac{1}{2})^2$

$(-4)^2$ $(-8)^2$

16 64

x's y's