6.10 Writing Equations of Circles HW

Directions: Write the equation of the circle in STANDARD form.

1) $x^2 + 2x + y^2 - 10y + 10 = 0$

$x^2+2x+\underline{1}+y^2-10y+\underline{25} = -10+\underline{1}+\underline{25}$

$(x+1)^2+(y-5)^2 = 16$

2) $x^2 + y^2 - 4x + 6y + 9 = 0$

$x^2-4x+y^2+6y = -9$

$x^2-4x+\underline{4}+y^2+6y+\underline{9} = -9+\underline{4}+\underline{9}$

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

3) $x^2 + y^2 - 10x - 12y + 40 = 0$

$x^2-10x+\underline{25}+y^2-12y+\underline{36} = -40+\underline{25}+\underline{36}$

$(x-5)^2+(y-6)^2 = 21$

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

$x^2+y^2-4x+2y = -1$

$x^2-4x+\underline{4}+y^2+2y+\underline{1} = -1+\underline{4}+\underline{1}$

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

5) $7x^2 + 7y^2 - 28y + 14 = 0$

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$x^2+y^2-4y+2 = 0$

$x^2+y^2-4y+\underline{4} = -2+\underline{4}$

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

6) $3x^2 + 3y^2 + 18x + 6y = 0$

$\frac{3}{3}\ \frac{3}{3}\ \frac{3}{3}\ \frac{3}{3}$

$x^2+y^2+6x+2y = 0$

$x^2+6x+\underline{9}+y^2+2y+\underline{1} = 0+\underline{9}+\underline{1}$

$(x+3)^2+(y+1)^2 = 10$

Directions: Write the equation of the circle in GENERAL form.

7) $(x-2)^2+(y+6)^2=25$

$x^2-4x+4+y^2+12y+36=25$

$\boxed{x^2+y^2-4x+12y+15=0}$

8) $(x+5)^2+y^2=27$

$x^2+10x+25+y^2=27$

$\boxed{x^2+y^2+10x-2=0}$

Directions: Write the equation of the circle in both forms.

9) Center: (2, –3) & Radius: 7

Std: $(x-2)^2+(y+3)^2=49$

General: $x^2-4x+4+y^2+6y+9=49$

$x^2+y^2+4x+6y-36=0$

10) Center: (–13, –16) & Point on the Circle: (–10, –16)

$d=r=3$

Std: $(x+13)^2+(y+16)^2=9$

General: $x^2+26x+169+y^2+32y+256=9$

$x^2+y^2+26x+32y+416=0$

11) Ends of the diameter are (18, –13) and (4, –3)

mdpt: $(11,-8)$ $r=\sqrt{74}$

Std: $(x-11)^2+(y+8)^2=74$

General: $x^2-22x+121+y^2+16y+64=74$

$x^2+y^2-22x+16y+111=0$

12) Center (0, 13) & Area of 25π $r=5$

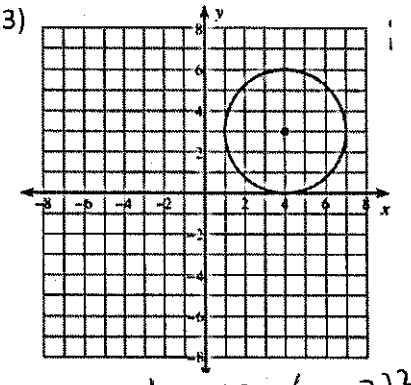
Std: $x^2+(y-13)^2=25$

General: $x^2+y^2-26y+169=25$

$x^2+y^2-26y+144=0$

25

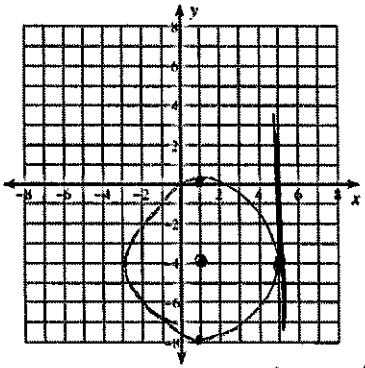
13)



Std: $(x-4)^2+(y-3)^2=9$

General: $x^2+y^2-8x-6y+16=0$

14) Center (1, –4) & Tangent to x = 5



Std: $(x-1)^2+(y+4)^2=16$

General: $x^2+y^2-2x+8y+1=0$