Pre-Calculus | Equations of Circles | Homework

Write an equation of a circle with the given center point and radius:

1. (2, 3), r = 5

$(x-2)^2+(y-3)^2=25$

2. (-3, 0), r=2.5

$(x+3)^2+y^2=6.25$

State the center point and radius for the circle which has equation:

3. $(x-1)^2+y^2=36$

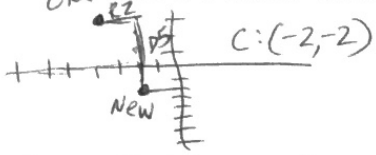
C: (1,0) r=6

4. $(x+2)^2+(y-6)^2=256$

C: (-2,6) r=16

5. The circle with the equation $(x+4)^2+(y-3)^2=64$ is translated to the right 2 units and down 5 units. What is the new equation?

old C: (-4,3)



C: (-2,-2)

$(x+2)^2+(y+2)^2=64$

6. Find the equation of the circle with center point (-4, 7) and circumference: 18π.

$(x+4)^2+(y-7)^2=81$

$C=2\pi r=18\pi$

$\frac{2\pi}{2\pi}$

$r=9$

$r^2=81$

7. Find the equation of a circle with center point (-1, 4) and containing the point (5, -4).

h k x y

$(5+1)^2+(-4-4)^2=r^2$

$6^2+(-8)^2=r^2$

$36+64=r^2=100$

$(x+1)^2+(y-4)^2=100$

Use completing the square method to write each equation in standard form, then state the center point and radius, and graph the circle in a coordinate plane.

8. $x^2+y^2+12x=45$

$x^2+12x+36+y^2=45+36$

$(x+6)^2+y^2=81$

C: (-6,0) r=9

9. $x^2+y^2+14y=-13$

$x^2+y^2+14y+49=-13+49$

$x^2+(y+7)^2=36$

C: (0,-7) r=6

10. $x^2+y^2-2x+6y=3$

$x^2-2x+1+y^2+6y+9=3+1+9$

$(x-1)^2+(y+3)^2=13$

C: (1,-3) $r=\sqrt{13}$

11. $x^2+y^2-10x+8y=56$

$x^2-10x+25+y^2+8y+16=56+25+16$

$(x-5)^2+(y+4)^2=97$

C: (5,-4) $r=\sqrt{197}$