Name _____ Hour _____

12.12 Equations of a Circle by Completing the Square

Practice Completing the Square:

1. $x^2 + 5x$

2. $x^2 - 2x$

3. $3x^2 + 18x$

4. $x^2 + 12x$

5. $x^2 - 4x = 5$

6. $x^2 - 5x = 10$

7. $x^2 + 16x + 8 = 0$

8. $x^2 + 10x + 15 = 0$

Write the equation of the following circles in standard form. Then identify the center and radius.

9. $x^2 + y^2 + 8x - 14y + 61 = 0$

10. $x^2 + y^2 + 14x + 2y + 49 = 0$

11. $x^2 + y^2 + 6x + 14y + 49 = 0$

12. $x^2 + y^2 - 10x + 20y + 61 = 0$

13. $x^2 + y^2 + 2x - 10y + 10 = 0$

14. $x^2 + y^2 - 8x + 2y - 8 = 0$

15. $x^2 + y^2 + 4x + 18y + 84 = 0$ 16. $4y + y^2 = -28x - x^2 - 191$

Use the following information provided to write the standard form equation of each circle.

17. $Center: (-11, -14)$ and $Area: 16\pi$

18. $Center: (-5, 12)$ and $Area: 36\pi$

19. $Center: (10, -4)$ and $Circumference: 4\pi$

20. $Center: (15, 14)$ and $Circumference: 2\pi\sqrt{15}$

21. $Center: (14, 17)$ and a $point$ on the $circle$ $(15, 17)$.

22. $Center: (-2, -3)$ and a $point$ on the $circle$ $(4, 0)$.