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Directions: Write the equation in standard form.

1)  $x^2 + y^2 + 12x - 6y - 3 = 0$

2)  $x^2 + y^2 + 7x - 15y - 40 = 0$

3)  $x^2 + y^2 + 30x - 30y = 0$

4)  $x^2 + y^2 + 18x - 27y + 2 = 0$

5)  $3x^2 + 3y^2 + 27x - 24y + 12 = 0$

6)  $x^2 + y^2 + 7x - 16y + 8 = 0$

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Directions: Find the center and radius of the circle.

7)  $x^2 + y^2 - 24y + 63 = 0$

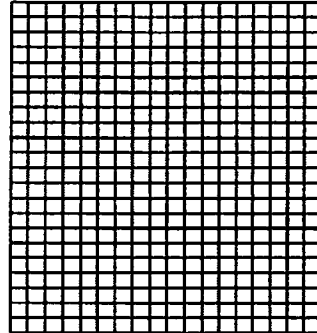
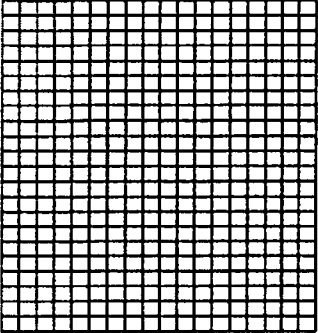
8)  $x^2 + y^2 + 10x - 12y - 3 = 0$

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Directions: Graph the circle.

9)  $x^2 + y^2 - 8x + 2y - 19 = 0$

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



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Directions: Complete all questions.

- 1) Find the equation in standard form.
- 2) Find the radius.
- 3) Find the exact area of the circle.

11)  $x^2 + y^2 + 8x - 4y + 4 = 0$

12)  $x^2 + y^2 = 25$

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Directions: Complete all questions.

- 1) Find the equation in standard form.
- 2) Find the radius.
- 3) Find the exact volume of the cylinder if the circle is pulled 10 units through space (at a right angle).

13)  $x^2 + y^2 - 12x + 27 = 0$

14)  $x^2 + y^2 - 18x + 10y + 94 = 0$

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