Name: _____ Completing the Square Homework

1. The equation of a circle is $x^2 + y^2 + 6y = 7$. What are the coordinates of the center and the length of the radius of the circle?

2. What are the center and radius of the circle whose equation is $x^2 + y^2 + 4x = 5$?

3. The equation $x^2 + y^2 - 2x + 6y + 3 = 0$ is equivalent to
   1) $(x-1)^2 + (y+3)^2 = -3$
   2) $(x-1)^2 + (y+3)^2 = 7$
   3) $(x+1)^2 + (y+3)^2 = 7$
   4) $(x+1)^2 + (y+3)^2 = 10$

4. What are the coordinates of the center of a circle whose equation is $x^2 + y^2 - 16x + 6y + 53 = 0$?

5. If $x^2 + 4x + y^2 - 6y - 12 = 0$ is the equation of a circle, the length of the radius is

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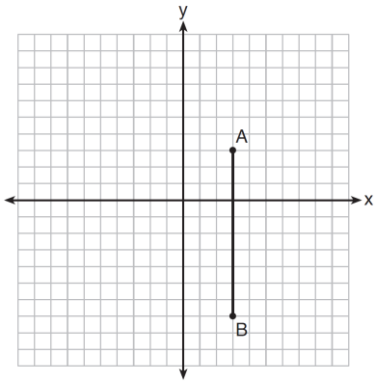
6. What are the coordinates of the center and the length of the radius of the circle represented by the equation $x^2 + y^2 - 4x + 8y + 11 = 0$?

7. Kevin's work for deriving the equation of a circle is shown below.

	$x^2 + 4x = -(y^2 - 20)$
STEP 1	$x^2 + 4x = -y^2 + 20$
STEP 2	$x^2 + 4x + 4 = -y^2 + 20 - 4$
STEP 3	$(x+2)^2 = -y^2 + 20 - 4$
STEP 4	$(x+2)^2 + y^2 = 16$

In which step did he make an error in his work?

8. The graph below shows $\overline{AB}$, which is a chord of circle O. The coordinates of the endpoints of $\overline{AB}$ are $A(3, 3)$ and $B(3, -7)$. The distance from the midpoint of $\overline{AB}$ to the center of circle O is 2 units.



What could be a correct equation for circle O?

1) $(x-1)^2 + (y+2)^2 = 29$
2) $(x+5)^2 + (y-2)^2 = 29$
3) $(x-1)^2 + (y-2)^2 = 25$
4) $(x-5)^2 + (y+2)^2 = 25$