Comprehensive Review #6

Topics:
Lesson 56 - System of inequalities
Lesson 63 - Cicles and completing the square

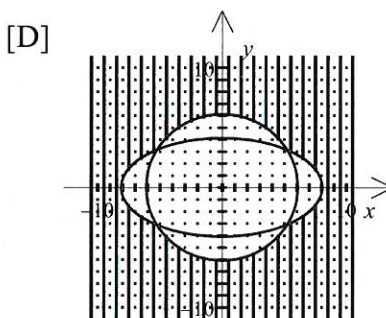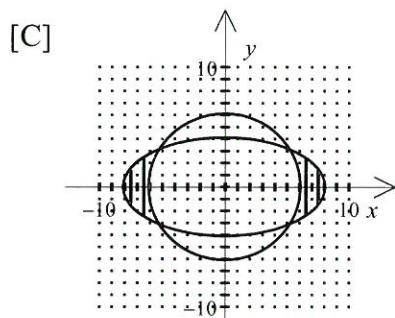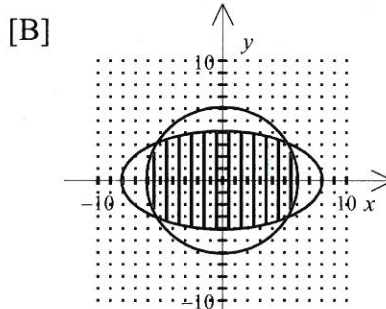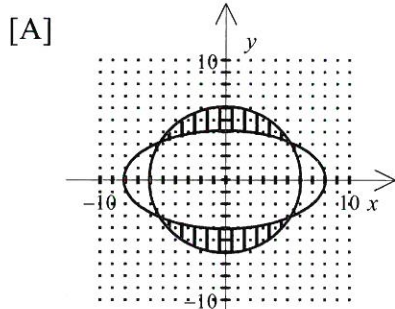1. Graph the solution to the system of inequalities: $\begin{cases} y \geq (x+5)^2 - 4 \\ y \leq x+3 \end{cases}$

2. Graph the solution to the system of inequalities: $\begin{cases} (x+1)^2 + y^2 \geq 16 \\ y \geq (x+1)^2 \end{cases}$

3. Graph the solution to the system of inequalities: $\begin{cases} (x-4)^2 + y^2 \leq 25 \\ y \geq (x-4)^2 \end{cases}$

4. Graph the solution to the system of inequalities: $\begin{cases} (x+3)^2 + y^2 \leq 9 \\ y \leq (x+3)^2 \end{cases}$
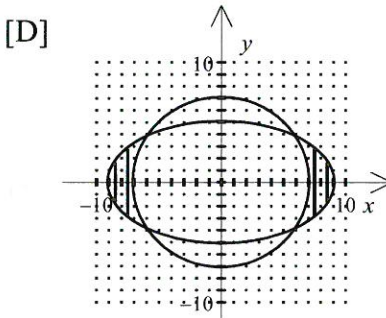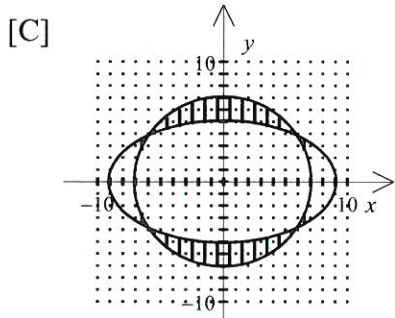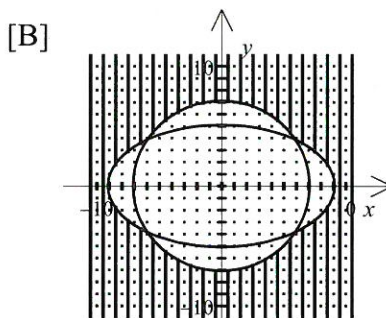
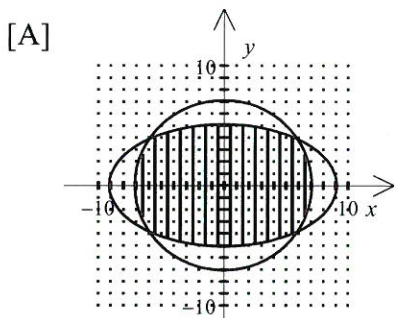5. Sketch the system of inequalities.

$$\begin{cases} \dfrac{x^2}{64} + \dfrac{y^2}{16} \leq 1 \\ x^2 + y^2 \leq 36 \end{cases}$$

[A]

[B]

[C]

[D]

6. Sketch the system of inequalities.

$$\begin{cases} \dfrac{x^2}{81} + \dfrac{y^2}{25} \leq 1 \\ x^2 + y^2 \leq 49 \end{cases}$$

[A]

[B]

[C]

[D]

7. Find the radius and the coordinates of the center of the circle whose equation is $x^2 + y^2 - 6x + 12y + 41 = 0$. Then graph the circle.
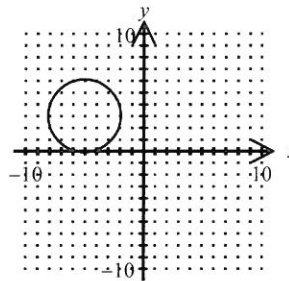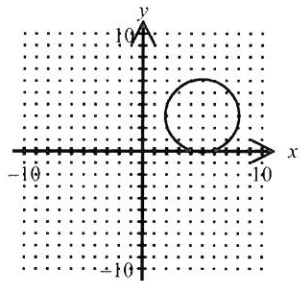
8. Find the radius and the coordinates of the center of the circle whose equation is $x^2 + y^2 + 10x - 2y + 1 = 0$. Then graph the circle.

9. Find the radius and the coordinates of the center of the circle whose equation is $x^2 + y^2 + 4x - 10y + 20 = 0$. Then graph the circle.

10. Find the radius, the coordinates of the center, and the graph of the circle whose equation is $x^2 + y^2 + 10x + 6y + 25 = 0$.
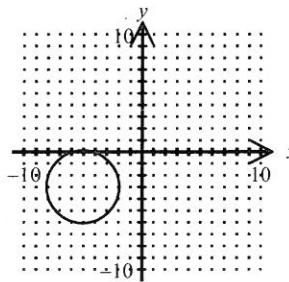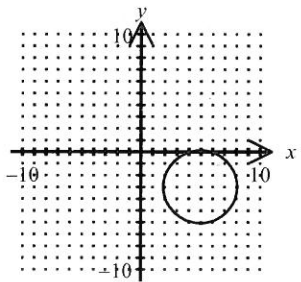
[A] center (5, 3); $r = 3$
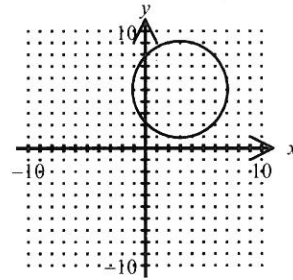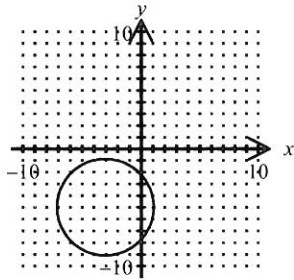
[B] center (–5, 3); $r = 3$

[C] center (5, –3); $r = 3$

[D] center (–5, –3); $r = 3$

11. Find the radius, the coordinates of the center, and the graph of the circle whose equation is
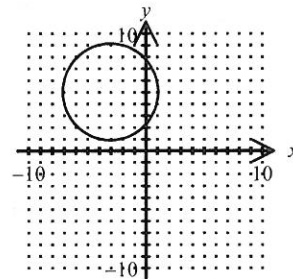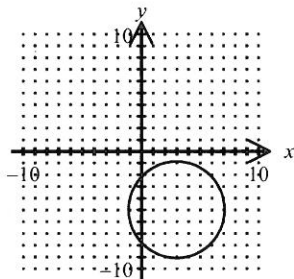$x^2 + y^2 - 6x - 10y + 18 = 0$.

[A] center $(-3, -5)$; $r = 4$

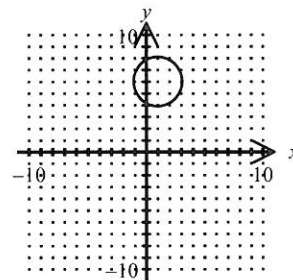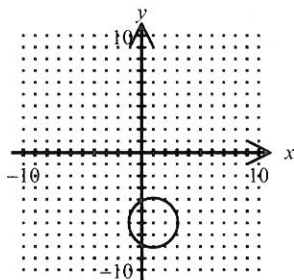[B] center $(3, 5)$; $r = 4$

[C] center $(3, -5)$; $r = 4$

[D] center $(-3, 5)$; $r = 4$

12. Find the radius, the coordinates of the center, and the graph of the circle whose equation is
$x^2 + y^2 + 2x + 12y + 33 = 0$.

[A] center $(1, -6)$; $r = 2$

[B] center $(1, 6)$; $r = 2$

[C] center $(-1, 6)$; $r = 2$

[D] center $(-1, -6)$; $r = 2$