

Ellipses

Sketch the graph of each ellipse. Identify the center, foci, vertices, and the co-vertices.

1. $\frac{x^2}{25} + \frac{y^2}{4} = 1$

2. $\frac{x^2}{1} + \frac{y^2}{9} = 1$

3. $\frac{x^2}{4} + \frac{y^2}{9} = 1$

4. $\frac{(x+2)^2}{4} + \frac{(y+1)^2}{9} = 1$

5. $\frac{(x-2)^2}{9} + \frac{(y-2)^2}{4} = 1$

6. $\frac{x^2}{1} + \frac{(y+2)^2}{9} = 1$

7. $\frac{(x-1)^2}{4} + \frac{(y-3)^2}{4} = 1$

8. $16(x+1)^2 + 9(y-1)^2 = 144$

9. $9(x-1)^2 + 25(y+2)^2 = 225$

10. $4x^2 + 25y^2 = 100$

Write the standard equation for each ellipse. Identify the coordinates of the center, vertices, co-vertices, and foci.

18. $x^2 + 4y^2 + 6x - 8y = 3$

19. $16x^2 + 4y^2 + 32x - 8y = 44$

20. $x^2 + 16y^2 - 64y = 0$

21. $25x^2 + y^2 - 50x = 0$

22. $4x^2 + 9y^2 - 16x + 18y = 11$

23. $25x^2 + 9y^2 + 100x + 18y = 116$

24. $9x^2 + 16y^2 - 36x - 64y - 44 = 0$

25. $36x^2 + 25y^2 - 72x + 100y = 764$

26. $7x^2 + 3y^2 - 28x - 12y + 19 = 0$

27. $16x^2 + 25y^2 + 32x - 150y = 159$