

Find the **center** of the following conics.

1. $\frac{x^2}{9} + \frac{y^2}{25} = 1$	2. $\frac{(x-3)^2}{1} + \frac{(y-6)^2}{9} = 1$	3. $\frac{(x-1)^2}{4} - \frac{y^2}{5} = 1$
4. $4x^2 - y^2 - 24x - 4y + 16 = 0$	5. $x^2 - 3y^2 + 8x - 6y + 4 = 0$	6. $\frac{(x-2)^2}{16} + \frac{(y+3)^2}{49} = 1$
7. $2y^2 - x^2 + 2x + 8y + 3 = 0$	8. $x^2 + 9y^2 + 6x - 18y + 9 = 0$	9. $\frac{(x+7)^2}{9} - \frac{(y+8)^2}{16} = 1$
10. $9x^2 + y^2 - 18x = 0$	11. $9x^2 + 4y^2 - 18x + 16y - 11 = 0$	12. $\frac{(x+1)^2}{25} - \frac{(y-5)^2}{36} = 1$

Find the **vertices** of the following conics.

13. $\frac{(x-1)^2}{1} + \frac{y^2}{25} = 1$	14. $\frac{(y-3)^2}{4} - \frac{(x+2)^2}{4} = 1$	15. $\frac{x^2}{9} + \frac{y^2}{36} = 1$
16. $\frac{(x-3)^2}{4} + \frac{(y+1)^2}{9} = 1$	17. $\frac{(x+4)^2}{9} + \frac{(y+2)^2}{4} = 1$	18. $\frac{(y-1)^2}{9} - \frac{(x+3)^2}{16} = 1$
19. $\frac{(x+5)^2}{16} + \frac{(y-4)^2}{4} = 1$	20. $\frac{(x+3)^2}{9} + \frac{(y-1)^2}{1} = 1$	21. $\frac{(y+3)^2}{4} - \frac{(x-2)^2}{9} = 1$
22. $\frac{(x-2)^2}{4} - \frac{(y+3)^2}{9} = 1$	23. $\frac{(y-2)^2}{4} - \frac{(x+2)^2}{1} = 1$	24. $\frac{(x-1)^2}{4} - \frac{(y+1)^2}{9} = 1$

Find the **foci** of the following conics.

25. $\frac{x^2}{49} + \frac{y^2}{149} = 1$	26. $\frac{(x-1)^2}{1} - \frac{(y-4)^2}{8} = 1$	27. $\frac{(x-4)^2}{5} + \frac{(y-6)^2}{9} = 1$
28. $\frac{(x-2)^2}{16} + \frac{(y-1)^2}{7} = 1$	29. $\frac{(x-2)^2}{5} + \frac{(y-2)^2}{9} = 1$	30. $\frac{(x-2)^2}{25} + \frac{(y+2)^2}{21} = 1$
31. $\frac{(x-4)^2}{4} - \frac{(y+1)^2}{5} = 1$	32. $\frac{(y-1)^2}{9} - \frac{(x+3)^2}{16} = 1$	33. $\frac{(y+4)^2}{4} - \frac{(x+3)^2}{12} = 1$

Write the equation of the asymptotes of the following conics.

34. $\frac{(x-2)^2}{4} - \frac{(y+3)^2}{9} = 1$	35. $\frac{(y+3)^2}{4} - \frac{(x-2)^2}{9} = 1$	36. $\frac{(y-2)^2}{4} - \frac{(x+2)^2}{1} = 1$
37. $\frac{(y-3)^2}{4} - \frac{(x+2)^2}{4} = 1$	38. $\frac{(x+4)^2}{9} - \frac{(y+1)^2}{3} = 1$	39. $\frac{x^2}{2} - \frac{y^2}{4} = 1$

40. Find the standard form of the equation of a hyperbola with center $(0,0)$, vertices $(\pm 1, 0)$, and foci $(\pm 3, 0)$.
41. Find the standard form of the equation of a hyperbola with center $(0,0)$, vertices $(0, \pm 3)$, and foci $(0, \pm 5)$.
42. Find the standard form of the equation of a hyperbola with center $(0,0)$, vertices $(0, \pm 4)$, and foci $(0, \pm 6)$.
43. Find the standard form of the equation of an ellipse with center $(0,0)$, vertices $(0, \pm 8)$, and foci $(0, \pm 4)$.
44. Find the standard form of the equation of an ellipse with center $(0,0)$, vertices $(0, \pm 4)$, and foci $(0, \pm 2)$.
45. Find the standard form of the equation of an ellipse with center $(0,0)$, vertices $(\pm 5, 0)$, and foci $(\pm 3, 0)$.
46. Classify the graph of $25x^2 + 16y^2 - 150x + 32y - 159 = 0$ as an ellipse, hyperbola, or circle.
47. Classify the graph of $x^2 + y^2 - 8y - 33 = 0$ as an ellipse, hyperbola, or circle.
48. Classify the graph of $25x^2 - 4y^2 - 72y + 224 = 0$ as an ellipse, hyperbola, or circle.
49. Classify the graph of $x^2 + 9y^2 + 6x - 18y + 9 = 0$ as an ellipse, hyperbola, or circle.
50. Classify the graph of $x^2 + y^2 - 16x + 10y + 53 = 0$ as an ellipse, hyperbola, or circle.

Pre-Calculus – Conics
Chapter 10 Test Review

Name: _____

Match the equation to the graph.

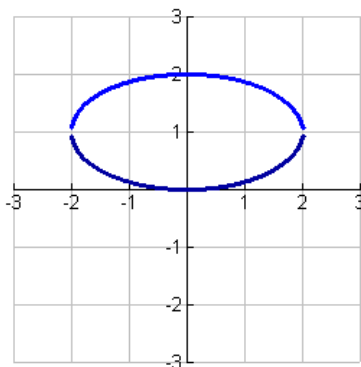
51. $\frac{(x-1)^2}{1} + \frac{y^2}{4} = 1$

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

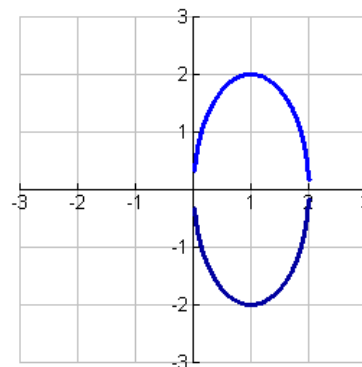
53. $\frac{(x+1)^2}{4} + \frac{(y-1)^2}{1} = 1$

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

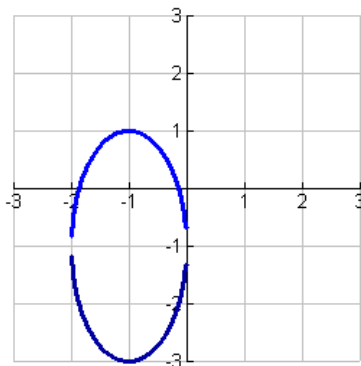
A.



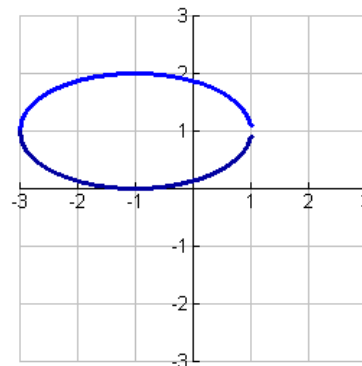
B.



C.



D.



Match the equation to the graph.

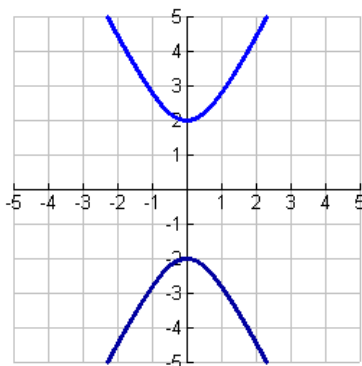
55. $\frac{x^2}{4} - \frac{y^2}{1} = 1$

56. $\frac{x^2}{1} - \frac{y^2}{4} = 1$

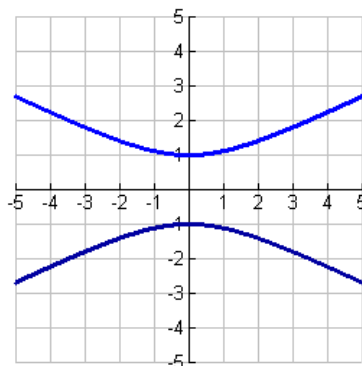
57. $\frac{y^2}{4} - \frac{x^2}{1} = 1$

58. $\frac{y^2}{1} - \frac{x^2}{4} = 1$

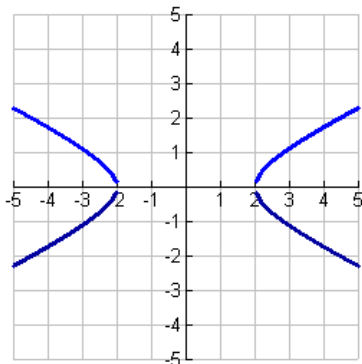
E.



F.



G.



H.

