

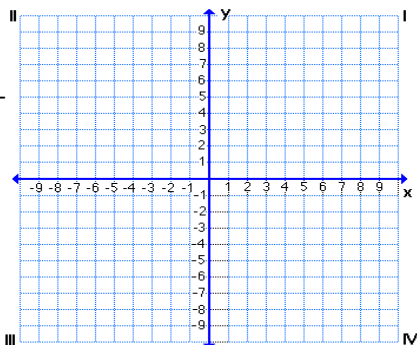
Graph the ellipse and identify the center, vertices, and foci.

1. $\frac{x^2}{9} + \frac{y^2}{25} = 1$

Center: _____

Vert: _____

Foci: _____

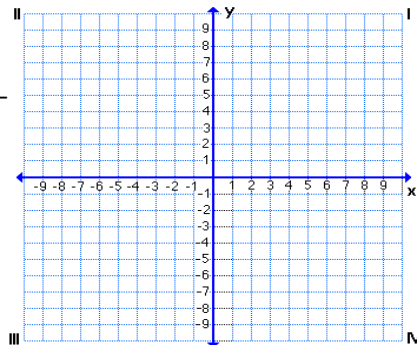


2. $4x^2 + 25y^2 = 100$

Center: _____

Vert: _____

Foci: _____

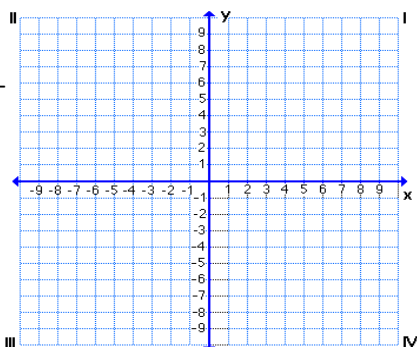


3. $x^2 + 4y^2 = 36$

Center: _____

Vert: _____

Foci: _____

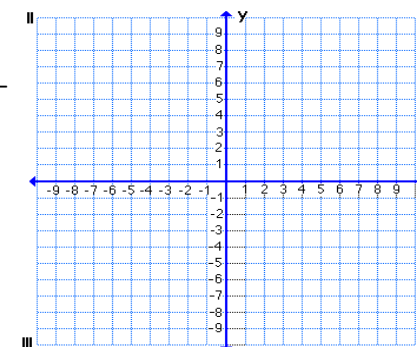


4. $x^2 + \frac{y^2}{4} = 1$

Center: _____

Vert: _____

Foci: _____

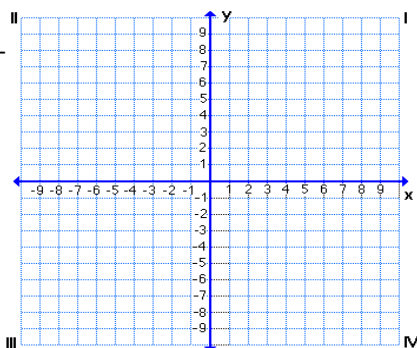


5. $\frac{(x-1)^2}{4} + \frac{(y+2)^2}{9} = 1$

Center: _____

Vert: _____

Foci: _____

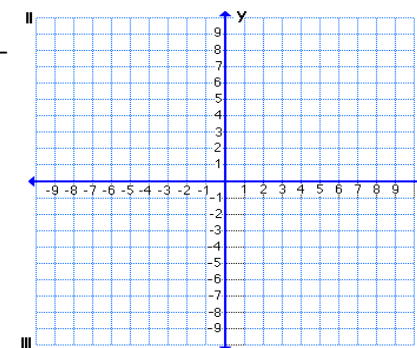


6. $36(x+4)^2 + (y+3)^2 = 36$

Center: _____

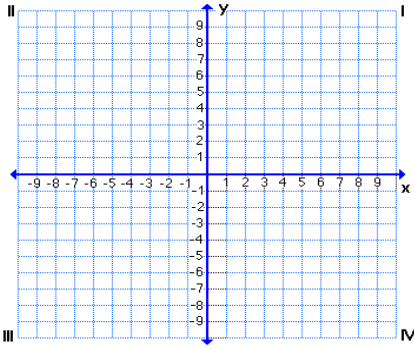
Vert: _____

Foci: _____

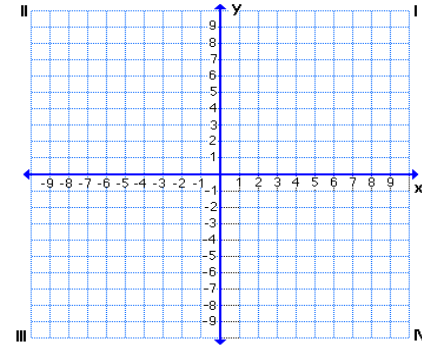


Find the standard form of the equation of each ellipse.

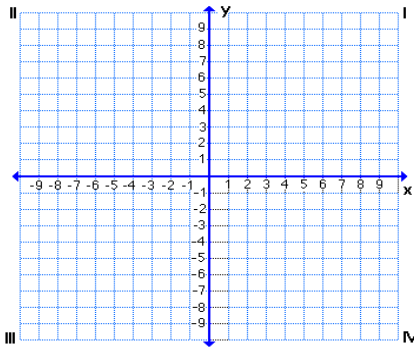
7. Foci $(0, \pm 3)$, vertices $(0, \pm 5)$



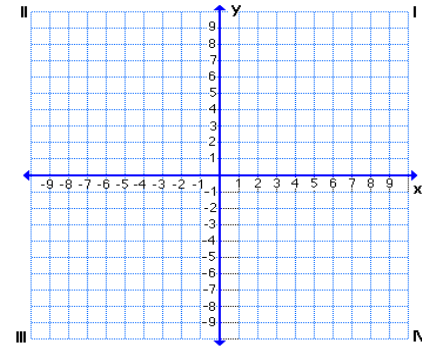
8. Major axis horizontal with length 12; length of minor axis 4; center: $(-1, 3)$



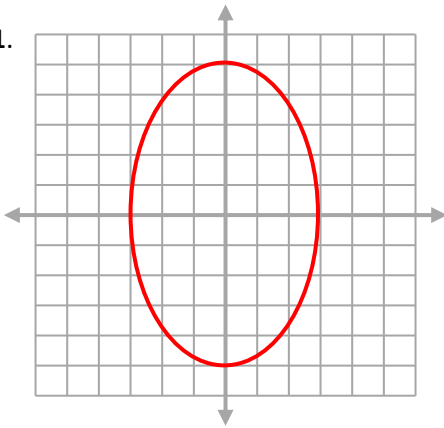
9. Foci $(\pm 5, 0)$, length of major axis 12



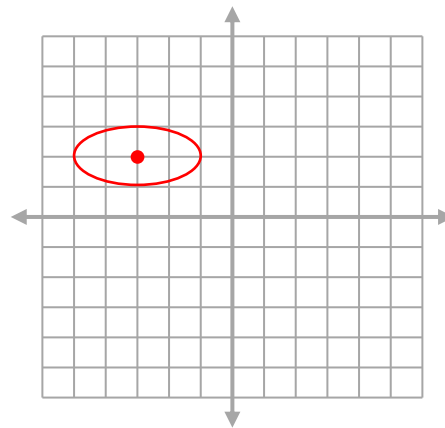
10. Endpoints of major axis: $(2, 2)$ & $(8, 2)$
Endpoints of minor axis: $(5, 3)$ & $(5, 1)$



11.



12.



Convert each equation to standard form by completing the square.

13. $4x^2 + 36y - 32x + 9y^2 + 64 = 0$

14. $9x^2 + 16y^2 - 18x + 64y - 71 = 0$

Graph the hyperbola and identify the center, vertices, asymptotes, and foci.

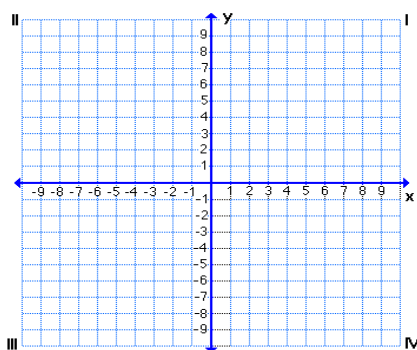
15. $\frac{y^2}{9} - \frac{x^2}{16} = 1$

Center: _____

Vertices: _____

Foci: _____

Asymptotes: _____



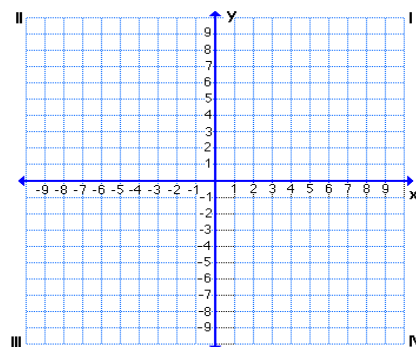
16. $4x^2 - y^2 = 16$

Center: _____

Vertices: _____

Foci: _____

Asymptotes: _____



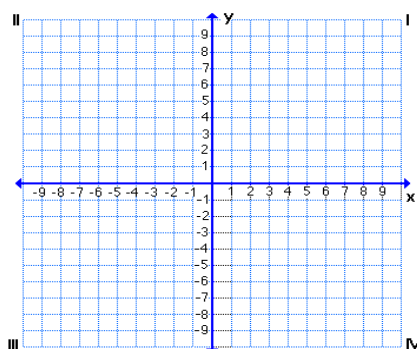
17. $4(x - 1)^2 - 9(y + 2)^2 = 36$

Center: _____

Vertices: _____

Foci: _____

Asymptotes: _____



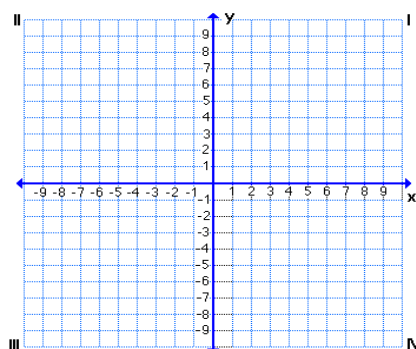
18. $\frac{(y + 1)^2}{25} - \frac{(x - 2)^2}{9} = 1$

Center: _____

Vertices: _____

Foci: _____

Asymptotes: _____



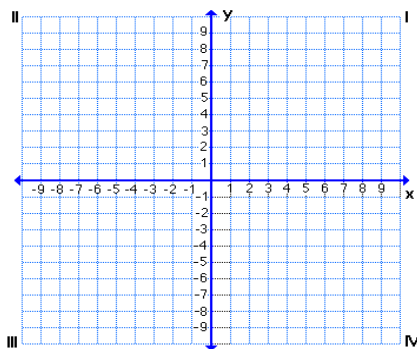
19. $\frac{(y + 2)^2}{25} - \frac{(x - 3)^2}{16} = 1$

Center: _____

Vertices: _____

Foci: _____

Asymptotes: _____



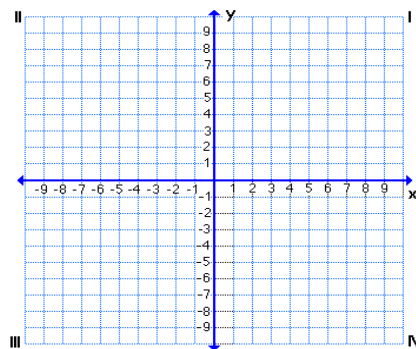
20. $\frac{(x - 2)^2}{25} - \frac{(y + 3)^2}{16} = 1$

Center: _____

Vertices: _____

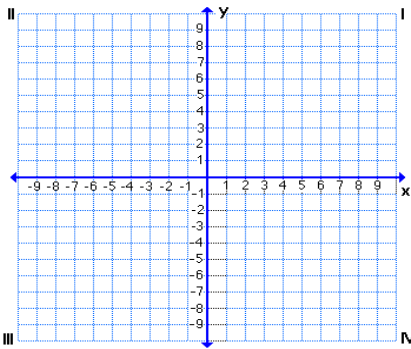
Foci: _____

Asymptotes: _____

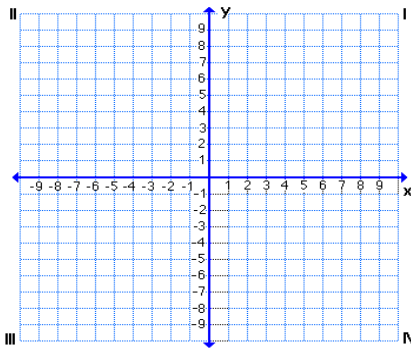


Find the standard form of the equation of each hyperbola.

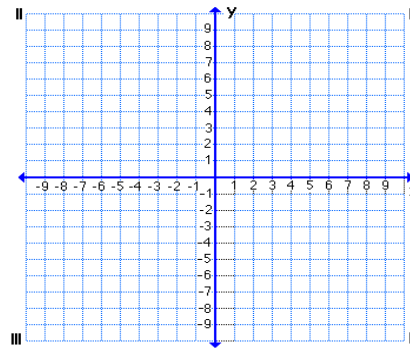
21. Foci $(0, \pm 4)$, vertices $(0, \pm 2)$



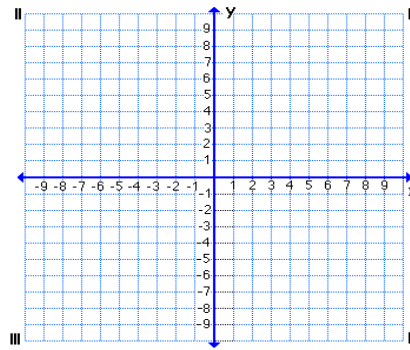
23. Endpoints of transverse axis: $(0, \pm 6)$
Asymptotes: $y = \pm 2x$



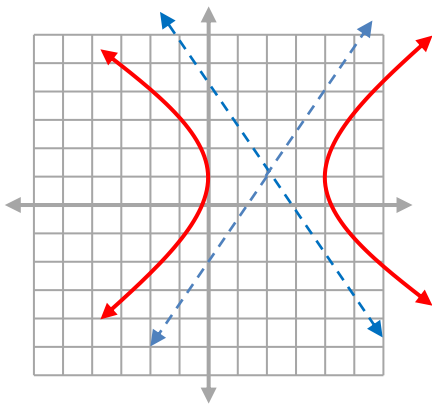
22. Vertices $(\pm 4, 0)$, Asymptotes: $y = \pm 3x$



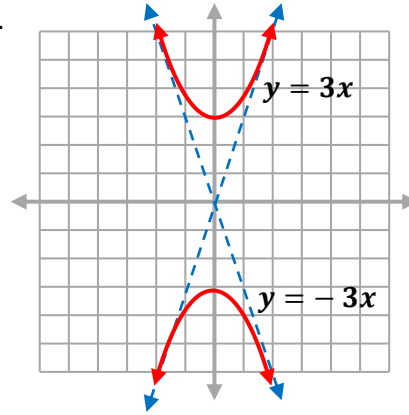
24. Foci $(0, \pm 1)$, length of transverse axis 1



25.



26.



Convert each equation to standard form by completing the square.

27. $4x^2 - y^2 + 32x + 6y + 39 = 0$

28. $9y^2 - 4x^2 - 18y + 24x - 63 = 0$

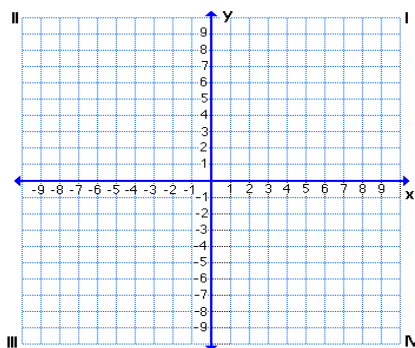
Graph the parabola and identify the vertex, directrix, and focus.

29. $y^2 = -12x$

Vertex: _____

Dir: _____

Focus: _____

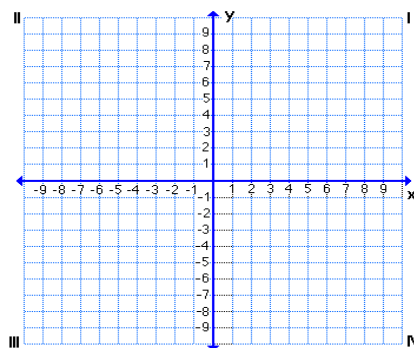


30. $x^2 = 8y$

Vertex: _____

Dir: _____

Focus: _____

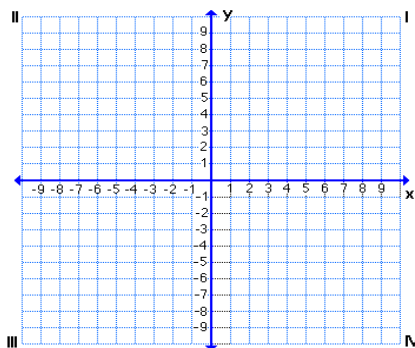


31. $6(x + 1)^2 + 12(y - 3) = 0$

Vertex: _____

Dir: _____

Focus: _____

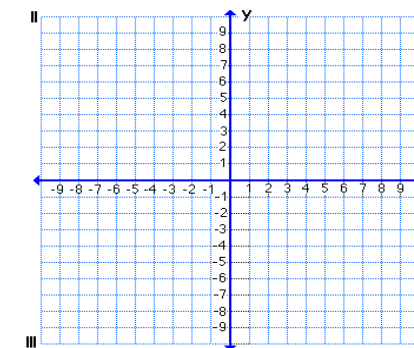


32. $y^2 - 12(x + 2) = 0$

Vertex: _____

Dir: _____

Focus: _____

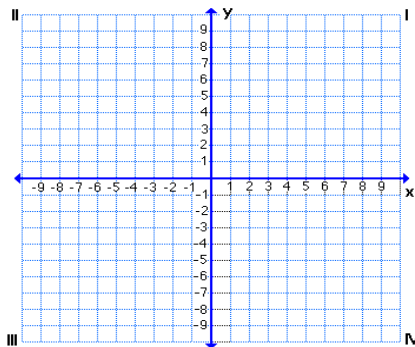


33. $(x + 2)^2 = -8(y + 2)$

Vertex: _____

Dir: _____

Focus: _____

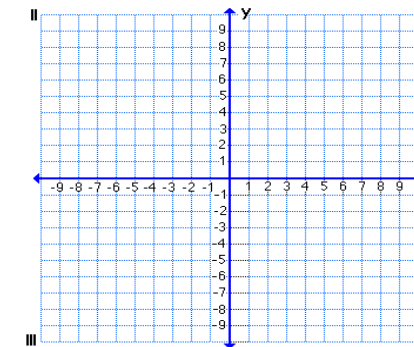


34. $(y - 1)^2 = -8x$

Vertex: _____

Dir: _____

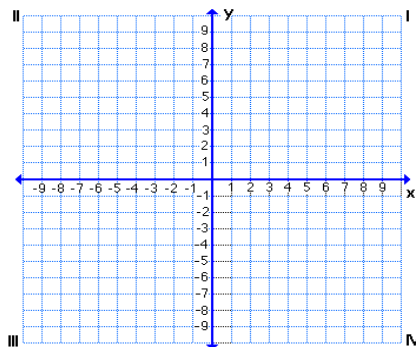
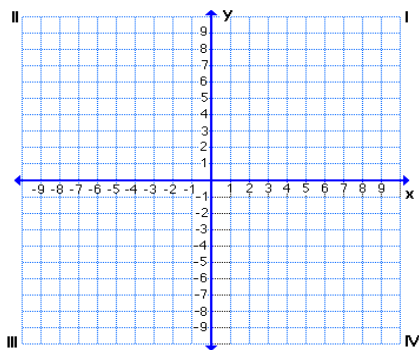
Focus: _____



Write an equation in standard form for the parabola satisfying the given conditions.

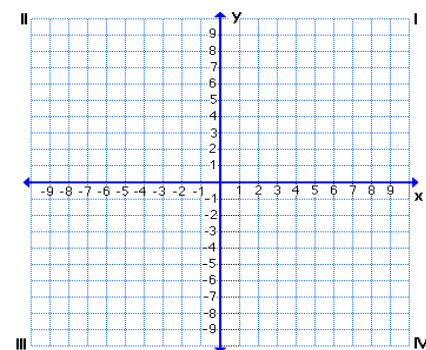
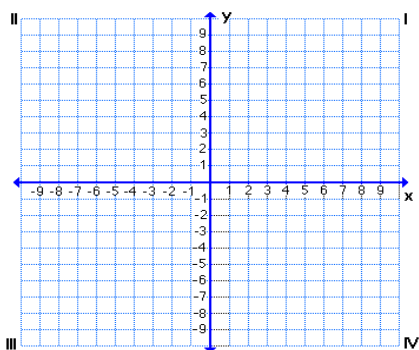
35. Focus: (9, 0); Directrix: $x = -9$

36. Focus: (-10, 0); Directrix: $x = 10$



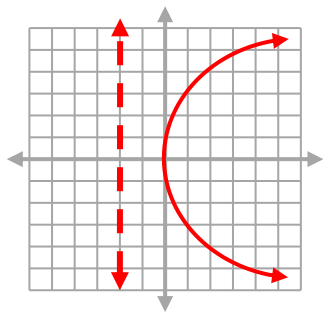
37. Vertex: (5, -2); Focus (7, -2)

38. Focus: (2, 4); Directrix: $x = -4$

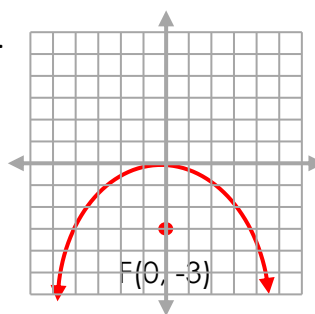


Find the equation for the parabola whose graph is shown.

39.



40.



Convert each equation to standard form by completing the square.

41. $x^2 + 6x + 8y + 1 = 0$

42. $y^2 + 8y - 4x + 8 = 0$

Answers:

1. $C(0, 0)$; $V(0, \pm 5)$; $F(0, \pm 4)$

2. $C(0, 0)$; $V(\pm 5, 0)$; $F(\pm \sqrt{21}, 0)$

3. $C(0, 0)$; $V(\pm 6, 0)$; $F(\pm 3\sqrt{3}, 0)$

4. $C(0, 0)$; $V(0, \pm 2)$; $F(0, \pm \sqrt{3})$

5. $C(1, -2)$; $V(1, 1)$; $(1, -5)$; $F(1, -2 \pm \sqrt{5})$

6. $C(-4, -3)$; $V(-4, 3)$; $(-4, -9)$; $F(-4, -3 \pm \sqrt{35})$

7. $\frac{x^2}{16} + \frac{y^2}{25} = 1$

8. $\frac{(x+1)^2}{36} + \frac{(y-3)^2}{4} = 1$

9. $\frac{x^2}{36} + \frac{y^2}{11} = 1$

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

11. $\frac{x^2}{9} + \frac{y^2}{25} = 1$

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

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

14. $\frac{(x-1)^2}{16} + \frac{(y+2)^2}{9} = 1$

15. $C(0, 0)$; $V(0, \pm 3)$; $F(0, \pm 5)$; $T: y = \pm \frac{3}{4}x$

16. $C(0, 0)$; $V(\pm 2, 0)$; $F(\pm 2\sqrt{5}, 0)$; $T: y = \pm 2x$

17. $C(1, -2)$; $V(-2, -2)$; $(4, -2)$; $F(1 \pm \sqrt{13}, -2)$; $T: y + 2 = \pm \frac{2}{3}(x - 1)$

18. $C(2, -1)$; $V(2, 4)$; $(2, -6)$; $F(2, -1 \pm \sqrt{34})$; $T: y + 1 = \pm \frac{5}{3}(x - 2)$

19. $C(3, -2)$; $V(3, 3)$; $(3, -7)$; $F(3, -2 \pm \sqrt{41})$; $T: y + 2 = \pm \frac{5}{4}(x - 3)$

20. $C(2, -3)$; $V(-3, -3)$; $(7, -3)$; $F(2 \pm \sqrt{41}, -3)$; $T: y + 3 = \pm \frac{4}{5}(x - 2)$

21. $\frac{y^2}{4} - \frac{x^2}{12} = 1$

22. $\frac{x^2}{16} - \frac{y^2}{144} = 1$

23. $\frac{y^2}{36} - \frac{x^2}{9} = 1$

24. $\frac{y^2}{1/4} - \frac{x^2}{3/4} = 1$

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

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

27. $\frac{(x+4)^2}{4} - \frac{(y-3)^2}{16} = 1$

28. $\frac{(y-1)^2}{4} - \frac{(x-3)^2}{9} = 1$

29. $V(0, 0)$; Dir: $x = 3$; $F(-3, 0)$

30. $V(0, 0)$; Dir: $y = -2$; $F(0, 2)$

31. $V(-1, 3)$; Dir: $y = \frac{7}{2}$; $F(-1, \frac{5}{2})$

32. $V(-2, 0)$; Dir: $x = -5$; $F(1, 0)$

33. $V(-2, -2)$; Dir: $y = 0$; $F(-2, -4)$

34. $V(0, 1)$; Dir: $x = 2$; $F(-2, 1)$

35. $y^2 = 36x$

36. $y^2 = -40x$

37. $(y + 2)^2 = 8(x - 5)$

38. $(y - 4)^2 = 12(x + 1)$

39. $y^2 = 8x$

40. $x^2 = -12y$

41. $(x + 3)^2 = -8(y - 1)$

42. $(y + 4)^2 = 4(x + 2)$