

Algebra II Chapter 10 (Conic Sections) Review SOLUTIONS

(some of the graphs have been omitted to save space)

1. $x = -\frac{1}{28}y^2$

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

3. $x = -\frac{1}{8}y^2$

4. $y = -\frac{1}{28}x^2$

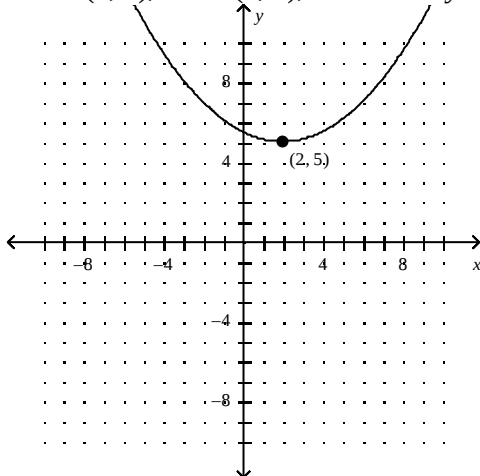
5. $y = -\frac{1}{20}x^2$

6. $y = \frac{1}{28}x^2$

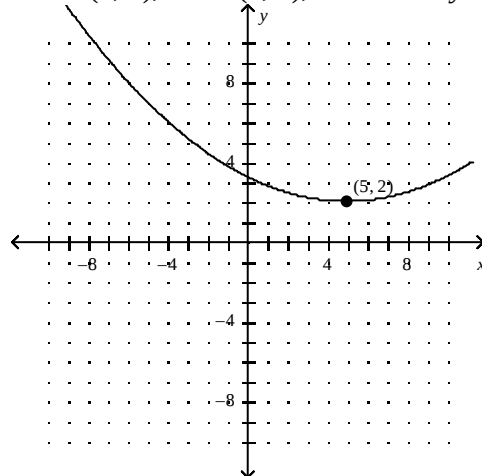
7. focus (0, -3), directrix at $y = 3$

8. focus (2, 0), directrix at $x = -2$

9. vertex (2, 5), focus (2, 7), directrix at $y = 3$



10. vertex (5, 2), focus (5, 7), directrix at $y = -3$



11. $(x + 5)^2 + (y + 8)^2 = 4$

12. $(x + 8)^2 + (y + 2)^2 = 25$

13. $(x - 2)^2 + (y + 4)^2 = 25$

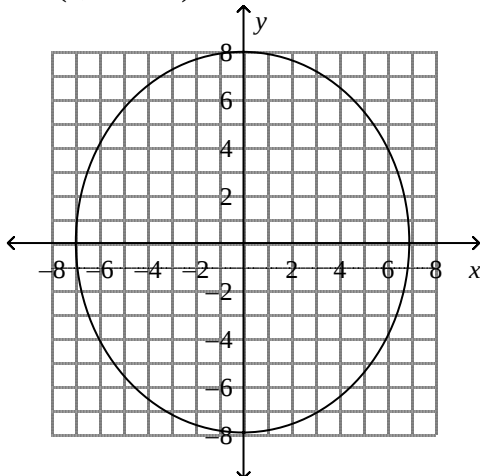
14. $(x + 5)^2 + (y - 7)^2 = 64$

15. Center: (-5, -3); Radius = 4

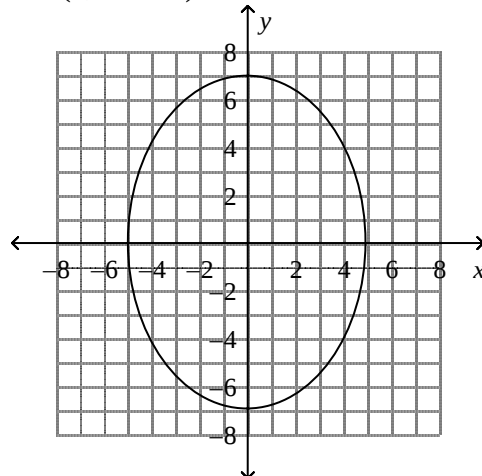
16. $\frac{x^2}{25} + \frac{y^2}{9} = 1$

17. $\frac{x^2}{4} + \frac{y^2}{16} = 1$

18. foci (0, $\pm\sqrt{15}$)



19. foci (0, $\pm 2\sqrt{6}$)



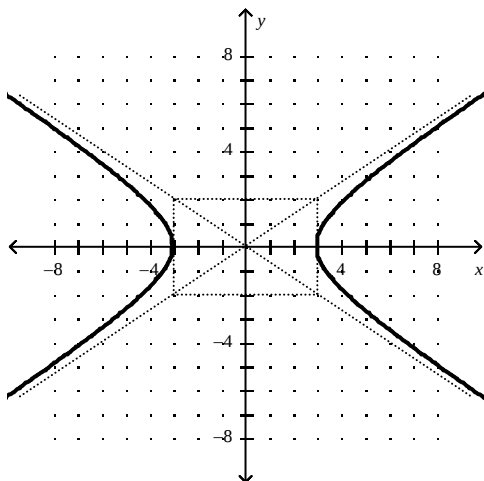
20. $\frac{(x + 4)^2}{16} + \frac{(y - 4)^2}{49} = 1$

21. $\frac{(x + 2)^2}{16} + \frac{(y + 5)^2}{25} = 1$

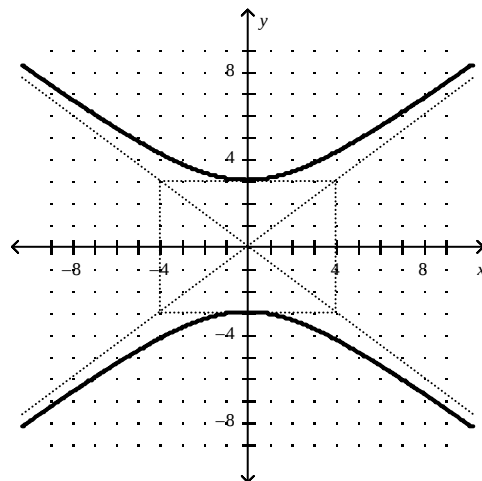
22. $\frac{(x + 4)^2}{36} - \frac{(y + 3)^2}{64} = 1$

23. $\frac{(x + 2)^2}{36} - \frac{(y + 4)^2}{64} = 1$

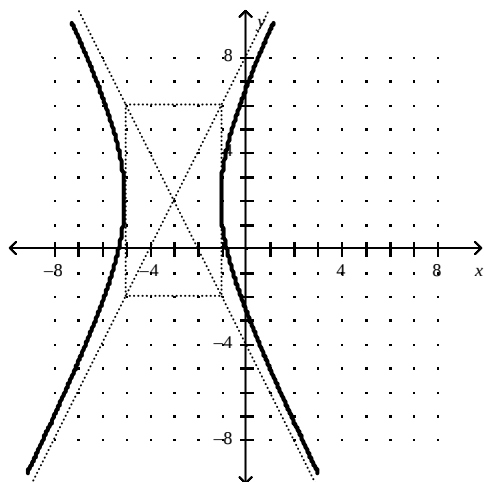
24.



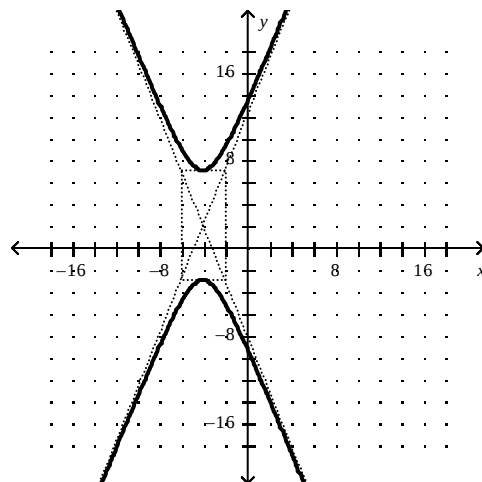
25.



26.



27.



28. Standard form: $\frac{(x+4)^2}{7} + \frac{(y-4)^2}{4} = 1$; ellipse with center $(-4, 4)$, foci at $(-4 \pm \sqrt{3}, 4)$

29. Standard form: $\frac{(x+4)^2}{15} + \frac{(y-2)^2}{5} = 1$; ellipse with center $(-4, 2)$, foci at $(-4 \pm \sqrt{10}, 2)$

30. Vertex form: $x = \frac{1}{4}(y+3)^2 + 5$; parabola; vertex $(5, -3)$

31. Vertex form: $x = \frac{1}{4}(y-5)^2 - 3$; parabola; vertex $(-3, 5)$

32. Standard form: $\frac{(x+3)^2}{6} - \frac{(y+2)^2}{8} = 1$; hyperbola with center $(-3, -2)$, foci at $(-3 \pm \sqrt{14}, -2)$

33. Standard form: $\frac{(x+2)^2}{5} - \frac{(y+4)^2}{5} = 1$; hyperbola with center $(-2, -4)$, foci at $(-2 \pm \sqrt{10}, -4)$

34. Standard form: $(x+4)^2 + (y-2)^2 = 9$; circle; center $(-4, 2)$; radius = 3

35. Standard form: $(x-3)^2 + (y-4)^2 = 36$; circle; center $(3, 4)$; radius = 6

36. linear-quadratic; $(0, -4)$, $(4, 0)$

37. linear-quadratic; $(-6, 0)$, $(0, 6)$