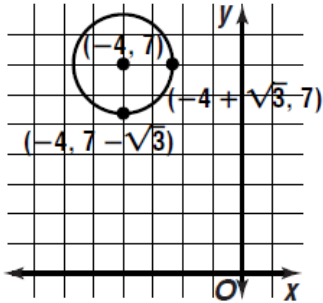


Chapter 10 Solutions

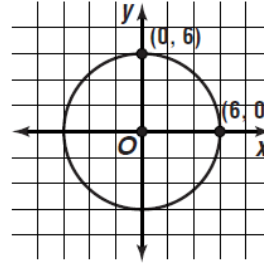
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Section 10.2 - Circles

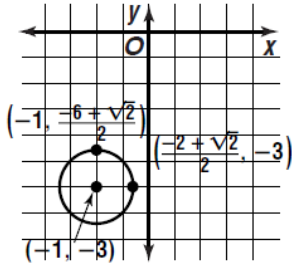
16. $(x + 4)^2 + (y - 7)^2 = 3$



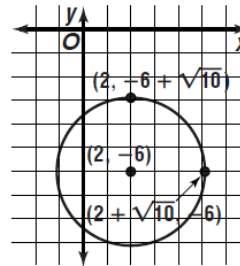
21. $x^2 + y^2 = 36$



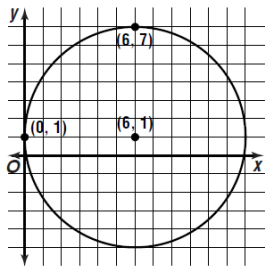
17. $(x + 1)^2 + (y + 3)^2 = \frac{1}{2}$



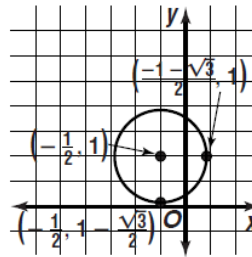
23. $(x - 2)^2 + (y + 6)^2 = 10$



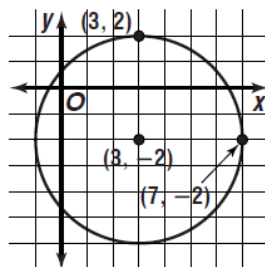
19. $(x - 6)^2 + (y - 1)^2 = 36$



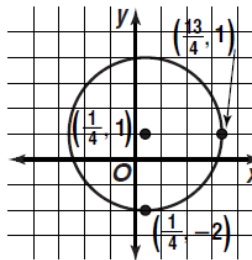
24. $(x + \frac{1}{2})^2 + (y - 1)^2 = \frac{3}{4}$



20. $(x - 3)^2 + (y + 2)^2 = 16$



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



Chapter 10 Solutions

These answers are to be used to check against your solutions. Your homework should show all of your work, not just the answers!

$$38. \left(x + \frac{1}{2}\right)^2 + \left(y - \frac{5}{2}\right)^2 = \frac{17}{2}$$

$$48. \text{ a) } x^2 + y^2 = 1,525,225$$

$$50. \sqrt{117}$$

58. A

Chapter 10 Solutions

These answers are to be used to check against your solutions. Your homework should show all of your work, not just the answers!

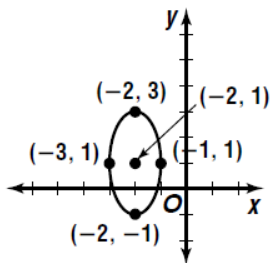
Section 10.3 – Ellipses

16. $\frac{x^2}{49} + \frac{(y+5)^2}{25} = 1$; $(\pm 2\sqrt{6}, -5)$

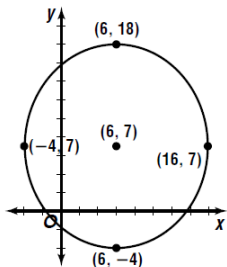
17. $\frac{(x+2)^2}{16} + \frac{y^2}{4} = 1$; $(-2 \pm 2\sqrt{3}, 0)$

18. $\frac{(y-4)^2}{64} + \frac{(x+3)^2}{25} = 1$; $(3, 4 \pm \sqrt{39})$

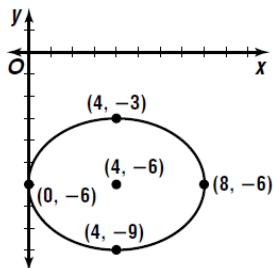
19. Center: $(-2, 1)$
 Vertices: $(-2, 3), (-2, -1), (-3, 1), (-1, 1)$
 Foci: $(-2, 1 \pm \sqrt{3})$



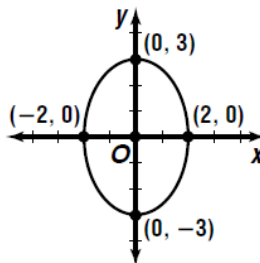
20. Center: $(6, 7)$
 Vertices: $(-4, 7), (16, 7), (6, 8), (6, -4)$
 Foci: $(6, 7 \pm \sqrt{21})$



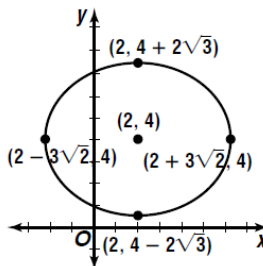
21. Center: $(4, -6)$
 Vertices: $(4, -3), (4, -9), (0, -6), (8, -6)$
 Foci: $(4 \pm \sqrt{7}, -6)$



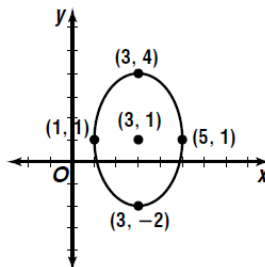
22. Center: $(0, 0)$
 Vertices: $(0, 3), (0, -3), (-2, 0), (2, 0)$
 Foci: $(0, \pm\sqrt{5})$



27. Center: $(2, 4)$
 Vertices: $(2 \pm 3\sqrt{2}, 4), (2, 4 \pm 2\sqrt{3})$
 Foci: $(2 \pm \sqrt{6}, 4)$



28. Center: $(3, 1)$
 Vertices: $(3, 4), (3, -2), (1, 1), (5, 1)$
 Foci: $(3, 1 \pm \sqrt{5})$



31. $\frac{(x+3)^2}{49} + \frac{(y+1)^2}{25} = 1$

32. $\frac{x^2}{49} + \frac{y^2}{45} = 1$

33. $\frac{x^2}{64} + \frac{y^2}{36} = 1$

Chapter 10 Solutions

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34. $\frac{(y+2)^2}{52} + \frac{(x+1)^2}{43} = 1$

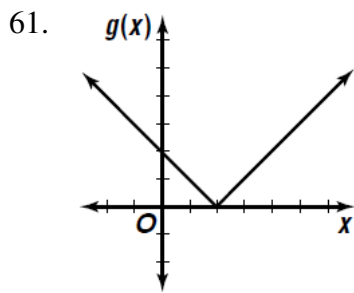
38. $\frac{(y+7)^2}{49} + \frac{(x-4)^2}{16} = 1$

49. a) $\frac{x^2}{2304} + \frac{y^2}{529} = 1$

b) about 42 feet

c) about 84 feet

60. minimum



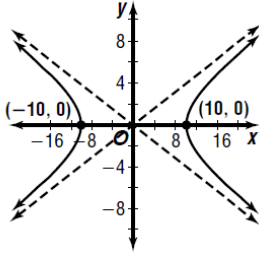
63. C

Chapter 10 Solutions

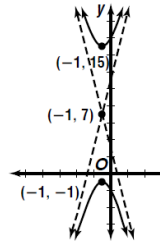
These answers are to be used to check against your solutions. Your homework should show all of your work, not just the answers!

Section 10.4 – Hyperbolas

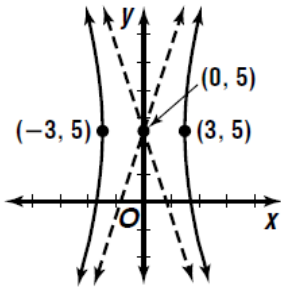
15. Center: $(0, 0)$
 Vertices: $(\pm 10, 0)$
 Foci: $(\pm 2\sqrt{29}, 0)$
 Asymp: $y = \pm \frac{2}{5}x$



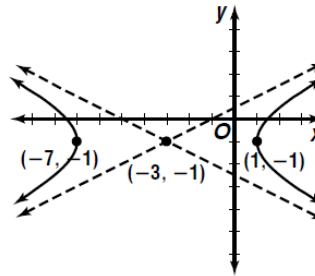
18. Center: $(-1, 7)$
 Vertices: $(-1, 15), (-1, -1)$
 Foci: $(-1, 7 \pm 2\sqrt{17})$
 Asymp: $y - 7 = \pm 4(x + 1)$



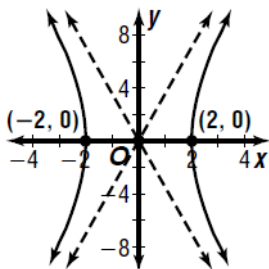
16. Center: $(0, 5)$
 Vertices: $(3, 5), (-3, 5)$
 Foci: $(\pm 3\sqrt{10}, 5)$
 Asymp: $y - 5 = \pm 3x$



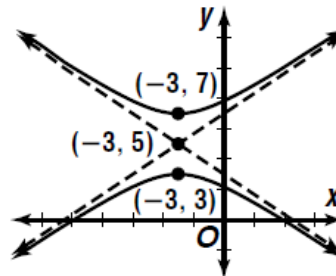
19. Center: $(-3, -1)$
 Vertices: $(1, -1), (-7, -1)$
 Foci: $(-3 \pm 2\sqrt{5}, -1)$
 Asymp: $y + 1 = \pm \frac{1}{2}(x + 3)$



17. Center: $(0, 0)$
 Vertices: $(-2, 0), (2, 0)$
 Foci: $(\pm\sqrt{53}, 0)$
 Asymp: $y = \pm \frac{7}{2}x$



20. Center: $(-3, 5)$
 Vertices: $(-3, 7), (-3, 3)$
 Foci: $(-3, 5 \pm \sqrt{13})$
 Asymp: $y - 5 = \pm \frac{2}{3}(x + 3)$



Chapter 10 Solutions

These answers are to be used to check against your solutions. Your homework should show all of your work, not just the answers!

$$24. \frac{(y-3)^2}{16} - \frac{(x-4)^2}{9} = 1$$

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

$$26. \frac{y^2}{4} - \frac{(x+4)^2}{1} = 1$$

$$31. \frac{(y+2)^2}{4} - \frac{(x-4)^2}{9} = 1$$

$$32. \frac{y^2}{9} - \frac{x^2}{72} = 1$$

$$33. \frac{x^2}{9} - \frac{(y-2)^2}{16} = 1$$

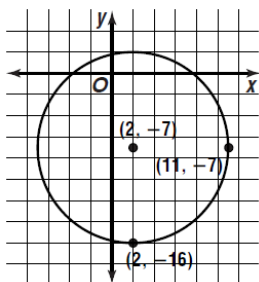
$$34. \frac{(y-2)^2}{49} - \frac{(x+3)^2}{16} = 1$$

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

$$42. \frac{5(y-1)^2}{64} - \frac{5(x-1)^2}{16} = 1$$

$$49. \frac{y^2}{16} + \frac{(x-2)^2}{7} = 1$$

$$50. (x - 2)^2 + (y + 7)^2 = 81$$

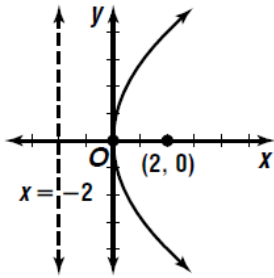


Chapter 10 Solutions

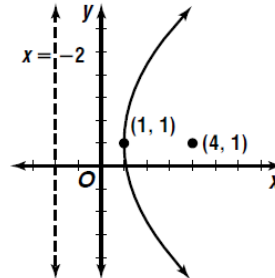
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Section 10.5 – Parabolas

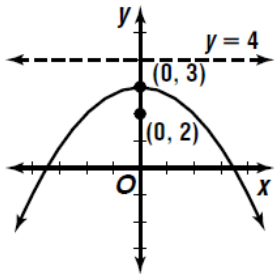
13. Vertex: (0, 0)
 Focus: (2, 0)
 Directrix: $x = -2$
 AOS: $y = 0$



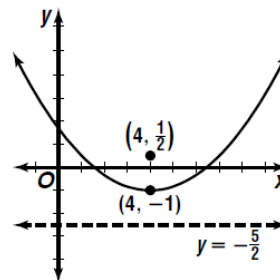
20. Vertex: (1, 1)
 Focus: (4, 1)
 Directrix: $x = -2$
 AOS: $y = 1$



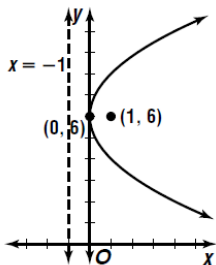
14. Vertex: (0, 3)
 Focus: (0, 2)
 Directrix: $y = 4$
 AOS: $x = 0$



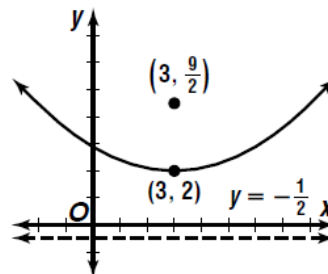
21. Vertex: (4, -1)
 Focus: $(4, \frac{1}{2})$
 Directrix: $y = -\frac{5}{2}$
 AOS: $x = 4$



15. Vertex: (0, 6)
 Focus: (1, 6)
 Directrix: $x = -1$
 AOS: $y = 6$



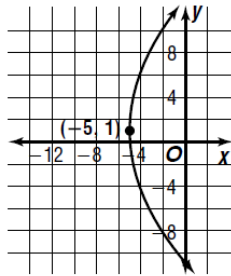
22. Vertex: (3, 2)
 Focus: $(3, \frac{9}{2})$
 Directrix: $y = -\frac{1}{2}$
 AOS: $x = 3$



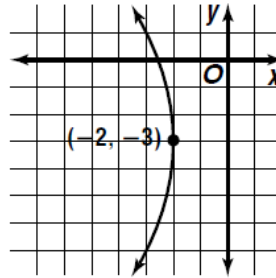
Chapter 10 Solutions

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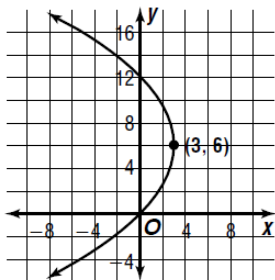
24. $(y - 1)^2 = 28(x + 5)$



28. $(y + 3)^2 = -16(x + 2)$



25. $(y - 6)^2 = -12(x - 3)$



36. a) example: $x^2 = 9000y$

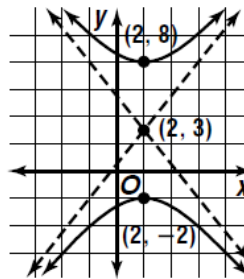
b) 67.6 ft

39. Center: (2, 3)

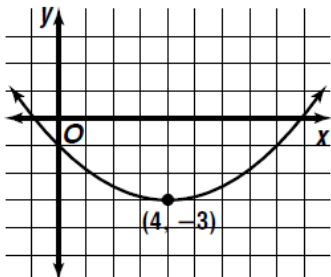
Foci: $(2, 3 \pm \sqrt{41})$

Vertices: (2, 8), (2, -2)

Asymp: $y - 3 = \pm \frac{5}{4}(x - 2)$



26. $(x - 4)^2 = 8(y + 3)$



40. Center: (0, -5)

Foci: $(\pm\sqrt{21}, -5)$

Vertices: (5, -5), (-5, -5), (0, -3), (0, -7)

27. $(x - 4)^2 = -(y - 3)$

