

Even Answers Chapter 11

11.1 (I will not show the graph answers.)

$$6) \quad V(3, -1) \quad F\left(3, -\frac{7}{8}\right) \quad y = -\frac{9}{8}$$

$$12) \quad V(-4, 2) \quad F\left(-\frac{7}{2}, 2\right) \quad x = -\frac{9}{2}$$

$$14) \quad x^2 = 12(y + 2)$$

$$16) \quad (y + 2)^2 = -2(x - 3)$$

$$20) \quad x^2 = -16y$$

$$24) \quad (x + 2)^2 = -8(y - 3)$$

$$26) \quad (x - 1)^2 = 8(y + 2)$$

11.2 (I will not show the graph answers.)

$$2) \quad V(\pm 5, 0) \quad F(\pm 3, 0) \quad M(0, \pm 4)$$

$$8) \quad V(\pm\sqrt{5}, 0) \quad F\left(\pm\frac{3\sqrt{2}}{2}, 0\right) \quad M\left(0, \pm\frac{\sqrt{2}}{2}\right)$$

$$10) \quad C(-2, 3) \quad V(3, 3), V'(-7, 3) \quad F(-2 \pm \sqrt{21}, 3) \quad M(-2, 5), M'(-2, 1)$$

$$12) \quad C(-1, 5) \quad V(-1 \pm 2\sqrt{2}, 5) \quad F(1, 5), F'(-3, 5) \quad M(-1, 7), M'(-1, 3)$$

$$16) \quad \frac{x^2}{16} + \frac{y^2}{9} = 1$$

$$18) \quad \frac{(x-1)^2}{4} + \frac{(y+2)^2}{16} = 1$$

$$26) \quad \frac{x^2}{13} + \frac{y^2}{39} = 1 \text{ or } \frac{x^2}{13} + \frac{4y^2}{39} = 1$$

$$30) \quad \frac{x^2}{9} + \frac{y^2}{49} = 1 \text{ or } \frac{x^2}{9} + \frac{4y^2}{49} = 1$$

$$32) \quad (\pm 2, \pm 2\sqrt{2})$$

$$48) \quad \text{a) } y = \sqrt{960\left(1 - \frac{x^2}{10,000}\right)}$$

$$\text{b) } \sqrt{960} \approx 31.0 \text{ ft.}$$

$$50) \quad \text{maximum distance: } 0.467 \text{ AU}$$

$$\text{minimum distance: } 0.307 \text{ AU}$$

11.3 (I will not show the graph answers.)

- 6) $V(0, \pm 1)$ $F(0, \pm 4)$ $W(\pm\sqrt{15}, 0)$ $y = \pm \frac{1}{\sqrt{15}}x$
- 8) $V(\pm 2\sqrt{2}, 0)$ $F(\pm 2\sqrt{3}, 0)$ $W(0, \pm 2)$ $y = \pm \frac{\sqrt{2}}{2}x$
- 12) $C(3, 1)$ $V(8, 1), V'(-2, 1)$ $F(3 \pm \sqrt{29}, 1)$ $W(3, 3), W'(3, -1)$ $(y-1) = \pm \frac{2}{5}(x-3)$
- 14) $C(-2, 6)$ $V(-2, 8), V'(-2, 4)$ $F(-2, 6 \pm \sqrt{5})$ $W(-1, 6), W'(-3, 6)$
 $(y-6) = \pm 2(x+2)$
- 16) $C(-2, -3)$ $V\left(-\frac{7}{5}, -3\right), V' = \left(-\frac{13}{5}, -3\right)$ $F\left(-2 \pm \frac{\sqrt{34}}{5}, -3\right)$
 $W(-2, -2), W'(-2, -4)$ $(y+3) = \pm \frac{5}{3}(x+2)$
- 20) $(x-1)^2 - \frac{(y-2)^2}{8} = 1$
- 22) $\frac{x^2}{25} - \frac{y^2}{39} = 1$
- 26) $\frac{x^2}{16} - \frac{y^2}{\frac{4}{3}} = 1$ or $\frac{x^2}{16} - \frac{3y^2}{4} = 1$
- 34) a circle with $C(0, 0)$ and $r = \sqrt{\frac{14}{3}}$
- 36) an ellipse with $C(-2, 3)$, $V(0, 3)$ and $(-4, 3)$ (more horizontal)
- 40) a horizontal parabola with $V\left(-\frac{15}{4}, -\frac{1}{2}\right)$ and opening down
- 44) $(4, \pm 2\sqrt{3})$