Rational Functions and Conics   Answers

1. a. A: $\dfrac{(x-11)^2}{484} + \dfrac{y^2}{363} = 1$; ellipse

B: $y^2 = 40(x + 10)$; parabola

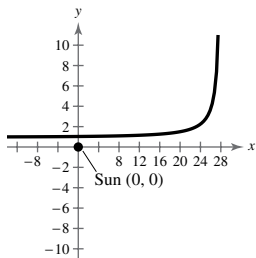C: $\dfrac{(x+21)^2}{169} - \dfrac{y^2}{272} = 1$; hyperbola

D: $\dfrac{(x-17)^2}{324} + \dfrac{y^2}{35} = 1$; ellipse

b. A, D; The orbits are elliptical.

c. A; The eccentricity is closest to zero.

2. $\dfrac{x^2}{49} + \dfrac{(y-7)^2}{144} = 1$ or $\dfrac{x^2}{49} + \dfrac{(y+7)^2}{144} = 1$

3. a.

b. $y = 1$