

Earths orbit

$$a = 3500000 + 146000000 = 149500000$$

$$\text{centre of a } 7000000 \div 2 = 3500000$$

equation of earth orbits

$$b = ?$$

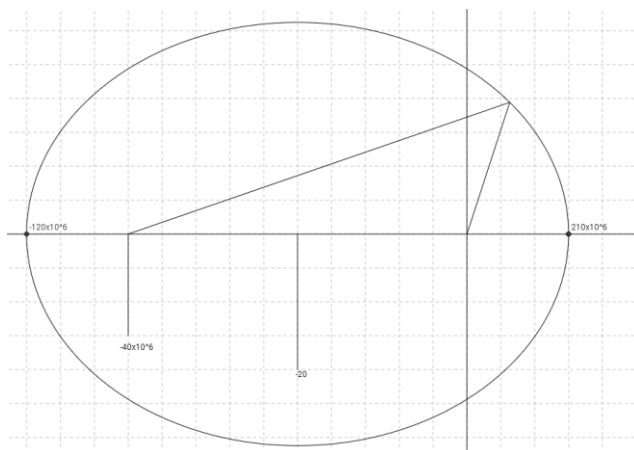
$$b^2 = a^2 - c^2$$

$$= 149500000^2 - 146000000^2$$

$$b^2 = 1.03425 \times 10^{15}$$

$$\frac{(x + 3500000)^2}{149500000^2} + \frac{y^2}{1.03425 \times 10^{15}} = 1$$

2



Mars orbit

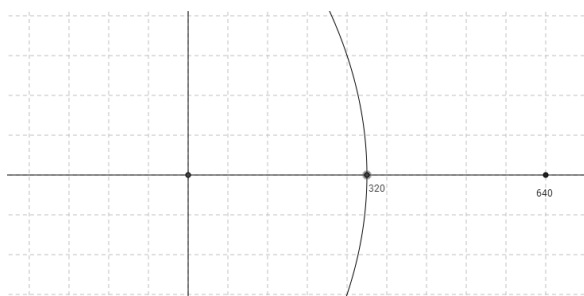
$$\text{Focus: } (460 - 250) \times 1 \times 10^6$$

$$= 210 \times 10^6 \text{ km away from end points}$$

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$b^2 = a^2 - c^2 = 20^2 - 210 \times 10^6 = ?$$

$$\frac{(x + 20 \times 10^6)^2}{20^2} + \frac{y^2}{?} = 1$$



comets orbit

$$y^2 = -4ax$$

$$y^2 = -4 \times 320 \times 10^6 (x - 320 \times 10^6)$$

1

