43 From example 8 we know that the altitude d of a satellite is given by $d = r\left(\frac{1}{\cos\theta} - 1\right)$.

$$\theta = 67.3° \Rightarrow d = 3963\left(\frac{1}{\cos 67.3°} - 1\right) \Rightarrow d \approx 6306.3 \text{ mi}$$

The altitude of the satellite is about 6306 miles. As θ increases, the altitude of a satellite also increases.