1). A satellite has an elliptical orbit around the earth with one focus at the earth’s center, E. The earth’s radius is 4,000 miles, the highest point that the satellite is from the surface of the earth is 800 miles, and the lowest is 200 miles. Find the eccentricity of the satellite’s orbit. Please submit your answer with work shown in an equation editor (or best way possible)

1). Find the foci and asymptotes of the hyperbola.

$\frac{y^{2}}{81} $- $\frac{x^{2}}{144}=1$

2). Find the first five terms of the arithmetic sequence.

 an = n - 4

3). Write the series in summation notation. Use the index i and let i begin at 1 in each summation.

 9 + 14 + 19 + 24 + 29

4). Find the center and the radius of the circle.

 x2 + 12x + 36 + (y - 4)2 = 49

5). Find the requested sum of the arithmetic sequence.

$$\sum\_{i=1}^{6}(-\frac{5}{2} i+3)$$

6). Find the first five terms of the infinite sequence whose nth term is given.

 an = n2 - n

7). Find the coordinates of the vertex of the parabola.

 y = 4x2 + 40x + 103

8). Rewrite the series using the new index j as indicated.

$$\sum\_{i=1}^{24}8i= \sum\_{j=0}^{}$$

9). Find the foci of the ellipse.

$$\frac{x^{2}}{400}+\frac{y^{2}}{625}=1$$

10). Find the sum of the series.

$$\sum\_{i=1}^{4}(i^{2}-2)$$

 11). Find the focus and the directrix of the parabola.

$$x=\frac{1}{8}y^{2}-\frac{1}{2}y+\frac{3}{2}$$