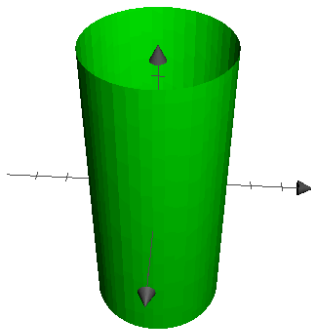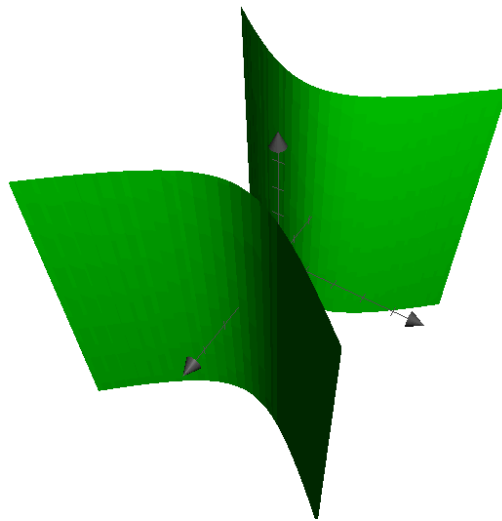# 1 Quadric Surfaces

1.1 Elliptic Cylinder

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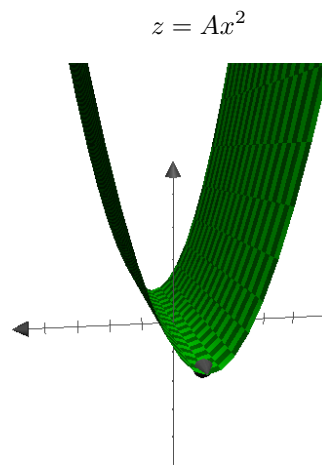
1.2 Hyperbolic Cylinder

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$
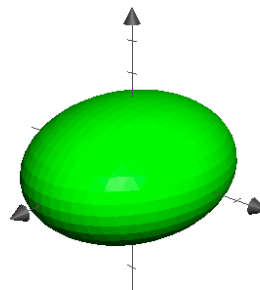
1.3 Parabolic Cylinder
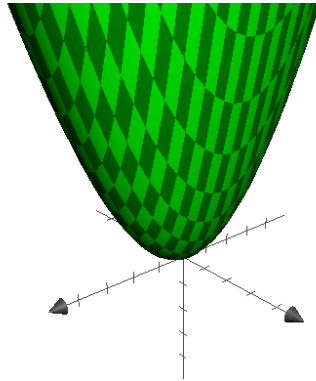
$$z = Ax^2$$

1.4 Ellipsoid

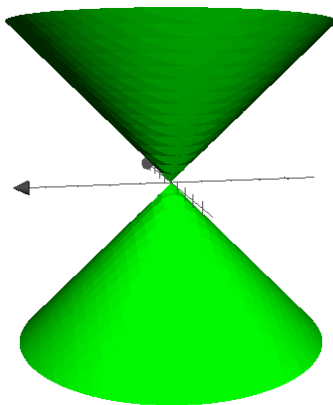$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

1.5 Parabaloid

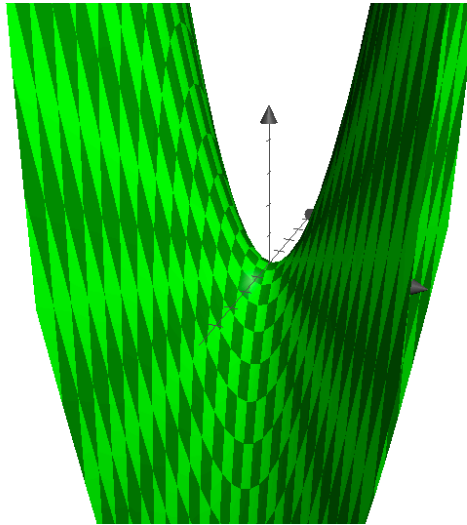$$z = \frac{x^2}{a^2} + \frac{y^2}{b^2}$$

1.6 Elliptic Cone

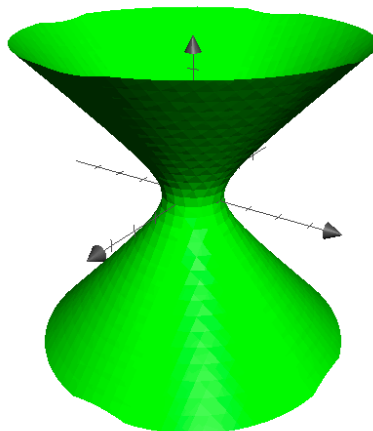$$z^2 = \frac{x^2}{a^2} + \frac{y^2}{b^2}$$

1.7   Hyperbolic Paraboloid

$$z = \frac{x^2}{a^2} - \frac{y^2}{b^2}$$

1.8   Elliptic Paraboloid of One Sheet

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

1.9 Elliptic Paraboloid of Two Sheets

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