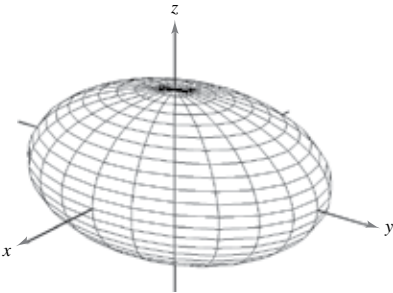
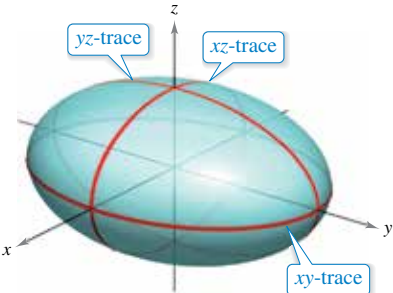
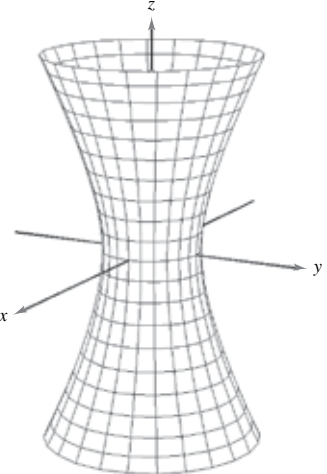
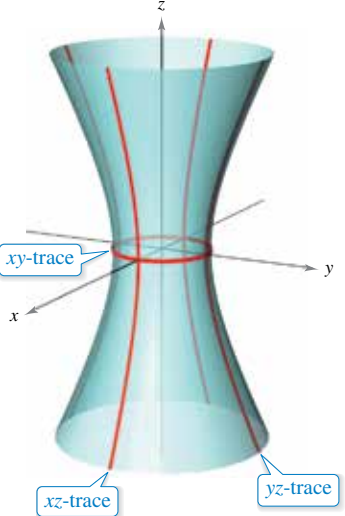
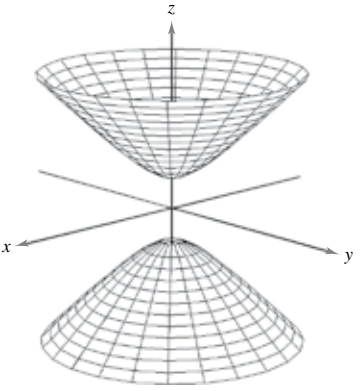
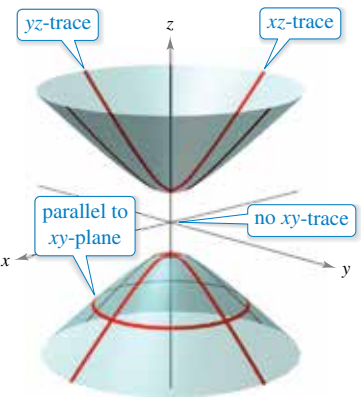
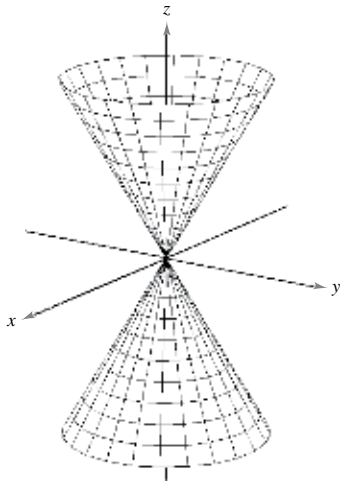


QUADRIC SURFACES

	<p style="text-align: center;">Ellipsoid</p> $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ <p>Trace Ellipse Ellipse Ellipse</p> <p>Plane Parallel to xy-plane Parallel to xz-plane Parallel to yz-plane</p> <p>The surface is a sphere when $a = b = c \neq 0$.</p>	
	<p style="text-align: center;">Hyperboloid of One Sheet</p> $\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = 1$ <p>Trace Ellipse Hyperbola Hyperbola</p> <p>Plane Parallel to xy-plane Parallel to xz-plane Parallel to yz-plane</p> <p>The axis of the hyperboloid corresponds to the variable whose coefficient is negative.</p>	
	<p style="text-align: center;">Hyperboloid of Two Sheets</p> $\frac{z^2}{c^2} - \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ <p>Trace Ellipse Hyperbola Hyperbola</p> <p>Plane Parallel to xy-plane Parallel to xz-plane Parallel to yz-plane</p> <p>The axis of the hyperboloid corresponds to the variable whose coefficient is positive. There is no trace in the coordinate plane perpendicular to this axis.</p>	

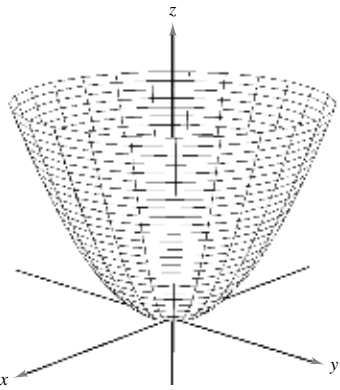
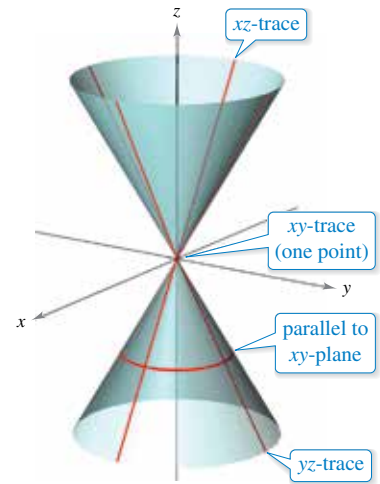


Elliptic Cone

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = 0$$

Trace	Plane
Ellipse	Parallel to xy -plane
Hyperbola	Parallel to xz -plane
Hyperbola	Parallel to yz -plane

The axis of the cone corresponds to the variable whose coefficient is negative. The traces in the coordinate planes parallel to this axis are intersecting lines.

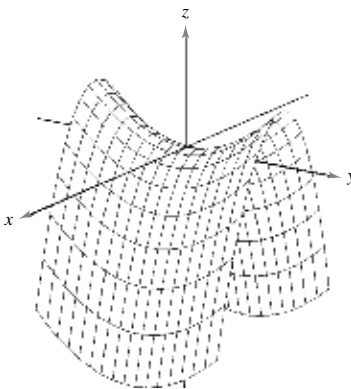
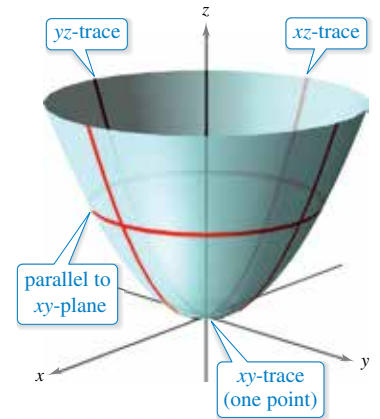


Elliptic Paraboloid

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

Trace	Plane
Ellipse	Parallel to xy -plane
Parabola	Parallel to xz -plane
Parabola	Parallel to yz -plane

The axis of the paraboloid corresponds to the variable raised to the first power.



Hyperbolic Paraboloid

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

Trace	Plane
Hyperbola	Parallel to xy -plane
Parabola	Parallel to xz -plane
Parabola	Parallel to yz -plane

The axis of the paraboloid corresponds to the variable raised to the first power.

