Check your understanding

20. What surface is described by the equation

$$(ax + by + cz)(dx + ey + fz) = 0,$$

where $a, \ldots, f$ are nonzero?

(a) An ellipsoid.

(b) A hyperboloid.

(c) The union of two planes.

(d) None of the above.

Answer: (c)

Explanation: It is the union of the plane $ax + by + cz = 0$ and the plane $dx + ey + fz = 0$. This is a special kind of cone.