

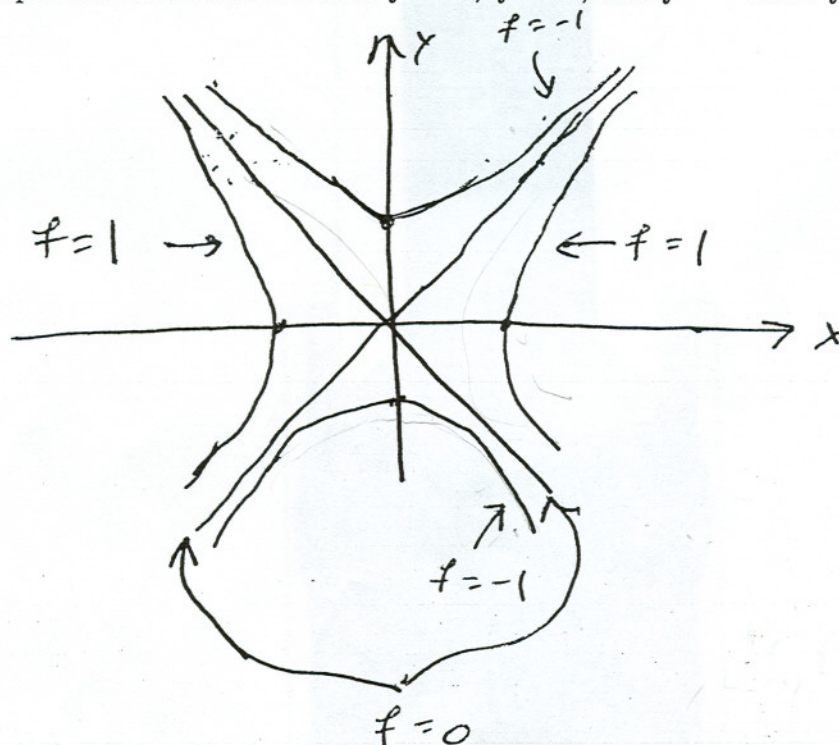
9. Find the equations of any line which intersects and is perpendicular to $\frac{x-2}{3} = \frac{y-5}{2} = \frac{z-4}{5}$. Be sure to tell me where your line intersects my line.

The line through $(2, 5, 4)$ which is \parallel to $2\vec{i} - 3\vec{j}$

$$\begin{aligned} x-2 &= 2t \\ y-5 &= -3t \\ z-4 &= 0 \end{aligned}$$

Note: There are infinitely many correct answers.

10. Graph and label the level sets $f = 0$, $f = 1$, and $f = -1$ for $f(x, y) = x^2 - y^2$.



$$f=0 : x=y \quad x=-y$$

$$f=1 \quad \text{hyperbola} \quad 1 = x^2 - y^2$$

$$f=-1 \quad \text{hyperbola} \quad 1 = y^2 - x^2$$