

6. You're in the Intergalactic Fire Detection Center (conveniently located at the origin of your galaxy) and think that you have a force field in your sector of responsibility. Your team launched three probes and watched them suddenly vaporize at the coordinates $(-10, 10, 3)$, $(10, -10, 3)$, and $(10, 10, 2.5)$. All coordinates are in Intergalactic Metric Units (IMUs). Based on knowledge you obtained at the StarFleet Academy, your guess is that the force field is a plane.

(a) Find the equation of the plane occupied by the force field.

(b) How far is the force field from the base? (Hint: See Example 8, page 800-801.)

(c) From other knowledge obtained at the StarFleet Academy, you know that the force field is weakest where it intersects the xy -plane. Find the equation of the line where the force field intersects the xy -plane.