Sections 12.2: Vectors in Three Dimensions

Group work:

Problem 1 *Solve the following problems:*

(a) *Which of the points* $(6, 2, 3)$, $(-5, -1, 4)$, *and* $(0, 3, 8)$ *is closest to the* xz*-plane? Which point lies on the* yz*-plane?*

(b) *Write an equation of the circle of radius* 2 *centered at* $(-3, 4, 1)$ *that lies in a plane parallel to the* xy*-plane.*

(c) *Describe the sphere* $x^2 + y^2 + z^2 + 6x - 14y - 2z = 5$ *(ie, find its center and radius).*

(d) *Find a vector whose magnitude is* 311 *and is in the same direction as the vector* $\langle 3, -6, 7 \rangle$.