



3. Find all values of  $h$  so that the lines  $x + hy = -5$  and  $2x - 8y = 6$  do *not* intersect, and indicate what this means for the set of solutions to the linear system of equations

$$x + hy = -5$$

$$2x - 8y = 6.$$

For all  $h$  so that the lines do not intersect, draw the line  $x + hy = -5$  and the line  $2x - 8y = 6$  to verify that they do not intersect.

4. Consider the following three planes, where we use  $(x, y, z)$  to denote points in  $\mathbb{R}^3$ :

$$2x + 4y + 4z = 1$$

$$2x + 5y + 2z = -1$$

$$y + 3z = 8$$

- a) Do all three of the planes intersect? If so, do they intersect at a single point, a line, or a plane?

- b) Looking ahead to 1.2: Write an augmented matrix corresponding to the system of equations whose solution set is the intersection of the three planes.