F-LE Do two points always determine a linear function?

Task

a. Suppose $P_1 = (0,5)$ and $P_2 = (3,-3)$. Sketch P_1 and P_2. For which real numbers m and b does the graph of a linear function described by the equation $f(x) = mx + b$ contain P_1? Explain. Do any of these graphs also contain P_2? Explain.

b. Suppose $P_1 = (0,5)$ and $P_2 = (0,7)$. Sketch P_1 and P_2. Are there real numbers m and b for which the graph of a linear function described by the equation $f(x) = mx + b$ contains P_1 and P_2? Explain.

c. Now suppose $P_1 = (c,d)$ and $P_2 = (g,h)$ and c is not equal to g. Show that there is only one real number m and only one real number b for which the graph of $f(x) = mx + b$ contains the points P_1 and P_2.