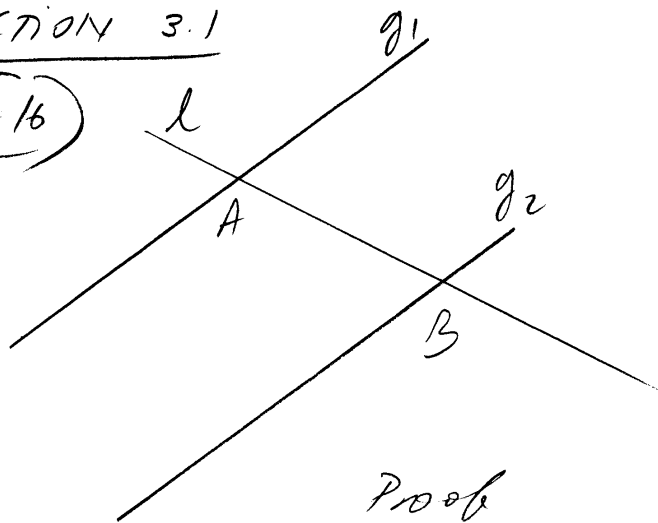


Homework # 4

SECTION 3.1

(#16)



Given $g_1 \parallel g_2$
 $l \cap g_1 = A$

Prove: $l \cap g_2 \neq \emptyset$

Proof

Indirect proof:

Assume $l \cap g_2 = \emptyset$ (l doesn't intersect g_2)

Because l, g_2 coplanar $\Rightarrow l \parallel g_2$

We have two lines (l and g_1) through a point A parallel to line g_2

Contradiction!

Given a line and a point outside the line, there is only one line parallel to the given line through a given point

$$\Rightarrow l \cap g_2 \neq \emptyset$$

$$l \cap g_2 = B$$