

Graded by: \_\_\_\_\_

Score: \_\_\_\_\_

ID: \_\_\_\_\_

## WORKSHEET 3 - DUE 9/21

MATH 2110Q – Fall 2015  
Professor Hohn

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You must show all of your work to receive full credit!

1. Suppose that  $\vec{a} \times \vec{b} = \vec{c} \times \vec{b}$  for all  $\vec{b}$ . Is it true that  $\vec{a} = \vec{c}$ ? If so, show that it is true. If not, give a counterexample.

2. Find the equation of the line that passes throughout the points  $(1, -2, 0)$  and  $(3, 2, 1)$ . Write your answer in parametric form and using symmetric equations.

3. Find the equation of the plane that contains the points  $(1, 1, 1)$ ,  $(2, 0, 0)$ , and  $(1, 1, 0)$ .

4. Find the equation of the plane that passes throughout the point  $(1, 5, 1)$  and is perpendicular to the planes  $2x + y - 2z = 2$  and  $x + 3z = 4$ .