Please show **all** your work! Answers without supporting work will not be given credit.
Clearly mention what theorem(s), if any, you are using.
Write answers in space provided. Use the backside if needed.
You have 15 minutes to complete this Quiz.
You can get MAXIMUM $(2 \times 4) + 6 = 14$ marks.

Name:

1. Below is a list of vectors and a list of properties. Match the two sets in such a way that each entry in left column matches a different entry in right column.

A. $\langle 3, -2, 8 \rangle$	I. is parallel to the straight line $\frac{x-1}{2} = y - 3 = z$
B. $\langle 4, 2, 2 \rangle$	II. is perpendicular to the plane $z - 2y - x = 3$
C. $\langle 3, 1, -1 \rangle$	III. is perpendicular to both $\langle 2, 3, 0 \rangle$ and $\langle -2, 5, 2 \rangle$
D. $\langle 1, 2, -1 \rangle$	IV. lies in the plane $x - y + 2z = 3$

2. Find equation of the straight line that passes through $(3, 1, 4)$ and is parallel to the line of intersection of the planes

$$x + 2y + 3z = 1 \text{ and}$$
$$2x - y + z = -3.$$