Name_____ ID_____

1-4	/20
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Total	/25

MATH 251 Quiz 1 Spring 2006

Sections 506 P. Yasskin

Multiple Choice & Work Out: (5 points each)

1. A triangle has vertices $P = (4,1,2)$, $Q = (2,1,4)$ and $R = (2,1,7)$. Find the angle at vertex Q.

a. $\frac{\pi}{4}$

b. $\frac{-\pi}{4}$

c. $\frac{\pi}{2}$

d. $\frac{-\pi}{2}$

e. $\frac{3\pi}{4}$

2. A triangle has vertices $P = (4,1,2)$, $Q = (2,1,4)$ and $R = (2,1,7)$. Find the area of the triangle.

a. 3

b. 6

c. $6\sqrt{3}$

d. 18

e. 36

3. If $\vec{u}$ points NorthWest and $\vec{v}$ points Down (toward the center of the earth), then $\vec{u} \times \vec{v}$ points

a. Up

b. SouthEast

c. SouthWest

d. NorthEast

e. NorthWest

4. Find the equation of the line which is perpendicular to the plane $2x - 4y + 3z = 3$ and passes through the point $(3, 2, -1)$. HINT: The normal to the plane is the tangent to the line.

a. $(x, y, z) = (3 + 2t, 2 + 4t, -1 + 3t)$

b. $(x, y, z) = (3 + 2t, 2 - 4t, -1 + 3t)$

c. $(x, y, z) = (2 + 3t, 4 + 2t, 3 - t)$

d. $(x, y, z) = (2 + 3t, -4 + 2t, 3 - t)$

e. $(x, y, z) = (2 + 3t, 4 - 2t, 3 - t)$

5. Find the point where the line $(x, y, z) = (1 - t, 2 + 2t, -3 + 3t)$ intersects the plane $3x - 2y + z = 4$.

SOLVE ON THE BACK OF THE SCANTRON.