

Math 261 Exam 1, Fall 2004

Show all work!	Name:	Score	
<p>1. A sphere centered at $P(3, -2, 1)$ contains the point $Q(1, 4, 2)$. Find:</p> <p>a) The distance $d(P, Q)$.</p> <p style="text-align: right;">Ans:_____.</p>		1	
		2	
		3	
		4	
		5	
		6	
<p>2. Given the force $\mathbf{F}=\langle 2, 1, -3 \rangle$ and the displacement $\mathbf{r}=\langle 4, -1, 1 \rangle$. Find</p> <p>a) The work done by the force.</p> <p style="text-align: right;">Ans:_____.</p>		7	
		8	
		9	
		10	
		Tot	
<p>3. Find the equation of the line through the point $P(1, -2, 4)$ and:</p> <p>a) Containing the point $Q(3, -2, 7)$.</p> <p style="text-align: right;">Ans:_____.</p>		b) Perpendicular to $4x - 5y + 2z = 12$	
		Ans:_____.	
<p>4. Given the points $P(2, 0, 0)$, $Q(0, 3, 0)$, and $R(0, 0, 5)$, find:</p> <p>a) The area of $\triangle PQR$.</p> <p style="text-align: right;">Ans:_____.</p>		b) The equation of the plane through P , Q and R .	
		Ans:_____.	
<p>5. A plane \mathcal{P} contains the lines $\mathbf{r}(t) = \langle 3 - 6t, 2 - 4t, 4 + 3t \rangle$ and $\mathbf{r}(t) = \langle -3 - 2t, -2, 7 + 5t \rangle$. Find:</p> <p>a) A normal \mathbf{N} to the plane \mathcal{P}.</p> <p style="text-align: right;">Ans:_____.</p>		b) The equation of the plane.	
		Ans:_____.	
<p>Extra Space</p>			

