

DIRECTIONS:

- Attach this page to the front of your homework (don't forget your name!).
- Please read article "A Guide to Writing Mathematics" by Dr. K. P. Lee which can be found on the class website, homework page. Note, homeworks in this course may be handwritten unless otherwise states.
- Show all work, clearly and in order.
- When required, **do not forget the units!**
- Circle your final answers. **You will loose points if you do not circle your answers.**

Question	Points	Score
1	1	
2	2	
3	3	
4	2	
5	2	
Total	10	

Problem 1: (1 points) After reading "A Guide to Writing Mathematic" by Dr. K. P. Lee, list five items pertaining to writing math of which you were previously unaware.

Problem 2: (2 points) How should writing homework solutions differ from writing reports? How should they be similar? List 5 points each.

Problem 3: (3 points) Let $\mathbf{u} = 15\mathbf{i} - 2\mathbf{j} + 4\mathbf{k}$ and $\mathbf{v} = \pi\mathbf{i} + 3\mathbf{j} - \mathbf{k}$.

(a) (1 points) Find $\|\mathbf{u}\|$ and $\|\mathbf{v}\|$.

(b) (2 points) Find the orthogonal projection of \mathbf{u} onto \mathbf{v} .

Problem 4: (2 points) Suppose a 2 kg object is sliding down a ramp having a 30 degree incline with the horizontal. Neglecting friction, gravity is the only force acting on the gravity. What is the component of the gravitational force in the direction of the of the motion of the object.

Problem 5: (2 points) Show that the two planes given by $Ax + By + Cz + D_1 = 0$ and $Ax + By + Cz + D_2 = 0$ are parallel, and that the distance between them is

$$\frac{|D_1 - D_2|}{\sqrt{A^2 + B^2 + C^2}}.$$