

At long last, this is the first homework assignment to be handed in. The due date is **Monday, 10/10/05**. These are your problems, do them yourself! Solutions should be well-written. Don't ~~scratch~~ scratch out your work; erase neatly, or re-write the page. Also, write horizontally! (One of the nice things about writing mathematics on a computer is that you are forced to write horizontally.)

————— **The Problems** —————

1. Find the equations of the planes that are parallel to the plane $x + 2y - 2z = 1$ and two units away from it. (*Hint*: Draw a picture and try to use the normal vector of the given plane to locate the other two planes.)
2. Use Simpson's Rule with $n = 6$ to estimate the length of the arc of the vector-valued function $\mathbf{r}(t) = \langle 2t, t^2, t^3 \rangle$ from the origin to the point $P(2, 1, 1)$. Make a table of your Simpson calculations. (*Hint*: Set up the arc length integral first using the formula in §14.3, then use Simpson's Rule to approximate its value.)