

Extra Credit Laundry List

MATH 2421 – ExCred.tex

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You may submit write-ups which total FIVE points or less. They are due on 5 July 2005. No late submissions, period.

- (#1) [1 pt.] Write a program (and demonstrate) in C++ or MATLAB which numbers the 32-ants for a 5-axis system.

x	y	z	v	w	32-ant #
+1	+1	+1	+1	+1	1
-1	+1	+1	+1	+1	2
+1	-1	+1	+1	+1	3
-1	-1	+1	+1	+1	4
+1	+1	-1	+1	+1	5

- (#2) [1 pt.] Show that the Law of Cosines

$$c^2 = a^2 + b^2 - 2ab \cos(C)$$

is equivalent to $\mathbf{u} \cdot \mathbf{v} = |\mathbf{u}| * |\mathbf{v}| * \cos(\alpha)$.

- (#3) [1 pt.] Suppose we have the plane $z = x + y$.

Determine how to rotate this plane $+30^\circ$ about the z-axis. Make a plot both planes together.

- (#4) [3 pts.] Answer Questions #1 through #4 on pp. 735-736 concerning Kepler's Laws.

- (#5) [3 pts.] I will post the Cobb-Douglas function details on the website.