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| Assessment 7 (10 or 11 am)Dusty Wilson Math 220 No work = no credit | **Name (first & last)**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *The infinite we shall do right away.  The finite may take a little longer.*  Stanislaw Ulam 1909-1984 (Polish mathematician) |

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| Warm-ups (1 pt each): | = | : = | : = |

(1 pt) According to Ulam (above), what is it that takes longer than the infinite? Please answer using complete sentences.

(4 pts) Find the eigenspace of  corresponding to the eigenvalue .

(4 pts) Find the eigenvalues (and multiplicity) of .

(4 pts) Find the eigenvalues (and multiplicity) of . Use algebraic methods (no calculator).

(4 pts) Let  and be bases for .

1. Find the change-of-coordinates matrix from *C* to *B*.
2. If , find 

(4 pts) The left graph shows  with respect to the standard and *B*-coordinates. The right graph shows with respect to the standard and *B*-coordinates. The transformation matrix with respect to the *B*-coordinates is .



1. Find 
2. Find 
3. Find the change of coordinate matrix 
4. Find *A*, the transformation matrix with respect to the standard basis (Note: There are at least two ways to find *A*. Also, the *A* matrix has decimals in it).