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| Assessment 3 (10 or 11 am)Dusty Wilson Math 220 No work = no credit | **Name (first & last)**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *Biographical history, as taught in our public schools, is still largely a history of boneheads: ridiculous kings and queens, paranoid political leaders, compulsive voyagers, ignorant generals -- the flotsam and jetsam of historical currents. The men* [and women] *who radically altered history, the great scientists and mathematicians, are seldom mentioned, if at all.* Martin Gardner 1914-2010 (American mathematician) |

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

(1 pt) According to Gardner (above), who should receive more focus in history classes?

(8 pts) Consider the matrices

, , and 

Compute *A*+2*B*, *BC*, and *CB*. If an expression is undefined, explain why.

(8 pts)  first rotates points through  radians and then reflects the points through the vertical -axis. Assume that is a linear transformation. Find the standard matrix *A* of *T*. [Hint: .]

(8 pts) Use the **matrix inverse** to solve  where  and .

(6 pts) True or False (circle one). Justify your answer.

1. (T or F) A linear transformation  is completely determined by its effect on the columns of the  identity matrix.

1. (T or F) 

1. (T or F) If *A* and *B* are  and invertible than  is the inverse of .

(4 pts) Complete the following proof.

Claim: Let  be a linear transformation. Then *T* is one-to-one if and only if the equation  has only the trivial solution.

Proof.

