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| Assessment 1Dusty Wilson Math 220No work = no credit**No calculator** | **Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*I have found a very great number of exceedingly beautiful theorems.*Pierre de Fermat1601 – 1665 (French mathematician) |

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

(1 pt) In the quote (above), Fermat refers to “beautiful theorems.” What do you think makes a mathematical theorem beautiful? Answer using complete English sentences.

(8 pts) The augmented matrix of a system is row reduced to . Complete the row reduction process and write the solution to the system in vector form.

(8 pts) Consider the system 

1. Write the system as a vector equation
2. Write the system as a matrix equation

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

1. (T or F) The pivot positions in a matrix depend on whether row interchanges are used in the row reduction process.

1. (T or F) The set  is always visualized as a plane through the origin.

1. (T or F) If the equation  is inconsistent, then  is not in the set spanned by the columns of *A*.

(4 pts) Prove the following claim.

Claim: For all  and all scalars *c*: 

(8 pts) Solve the linear system using matrix methods

