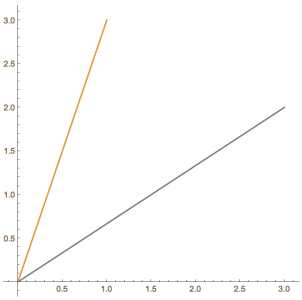
MATH 316D W08

DD1 Individual Quiz

1. **Keep**.
2. **Change** to, "The following matrix:"
   $$\begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 3 \\ 0 & 1 & 6 \end{bmatrix}$$
   (a) Is row equivalent to the 3×3 identity matrix I_3.
   (b) Is inearly independent about it's columns.
   (c) Is invertible.
   (d) Has a nonzero determinant.
   (e) All of the above. $\implies$ **Correct**
   (f) Only answers a and c.
3. **Keep**.
4. **Keep**.
5. **Keep**.

DD2 Group Quiz

1. **Keep**, but please change the format of one of the answers. The answer that needs to be changed is, "A is row-equivalent to In". Please change to, "A is row-equivalent to I_n".
2. **Keep**.
3. **Keep**.
4. **Delete**.
5. **Keep** (previously question 5).
6. **Add**, "Given the following column vectors as shown, what is the area of the parallelogram that they create?"



   (a) 11
   (b) 3 $\implies$ **Correct**
   (c) -3
   (d) Not enough information given.
7. **Add**. "Compute the determinant of the following matrix by hand and select the answer that best represents your work."
   $$\mathbf{A}= \begin{bmatrix} 1 & -2 & 3 & -4 \\ 0 & 5 & -6 & 7 \\ 0 & 0 & -8 & 9 \\ 0 & 0 & 0 & -10 \end{bmatrix}$$

(a) 0

(b) 246

(c) 400 $\implies$ **Correct**

(d) -246

(e) The $det(A)$ is not an allowable operation.

DD3 Weekly Quiz

1. **Keep** but please reword to, "If a matrix is a 3×3 and has exactly two pivots, then it is possible for the columns of that matrix to span $\mathbb{R}^3$."

2. **Keep**.

3. **Keep**.

4. **Keep**.

5. **Keep** and please make sure the correct answer keyed is $\implies$ **False**

6. **Keep**.

7. **Change** to what was previously question 8.

8. **Add**, "Find the determinant of the following matrix by hand using the method of cofactor expansion about a column, then select the answer that best represents your work."

   $\mathbf{A}= \begin{bmatrix} 1 & -2 & 3 & -4 \\ 2 & -5 & -6 & 7 \\ 0 & 4 & -8 & 9 \\ 0 & 0 & 4 & -10 \end{bmatrix}$

   (a) -284 $\implies$ **Correct**

   (b) 0

   (c) 400

   (d) -400

   (e) The $det(A)$ is not an allowable operation.

9. **Keep** but please fix the wording in **part a.** of the question so that it reads as follows: "Determine if $\mathbf{v}_3$ is in the span of $\mathbf{v}_1$, and $\mathbf{v}_2$." Also please make sure that appropriate answers are along the lines of:

   (a) $\vec{v}_3$ is in the span of $\vec{v}_1$ and $\vec{v}_2$ because in RREF the equation $\mathbf{A}\vec{v} = \vec{b}$, where $\mathbf{A} = \{\vec{v}_1, \vec{v}_2\}$ and $\vec{b} = \vec{v}_3$, has a solution.

   (b) The vectors in S are not linearly independent, because in RREF vectors $\vec{v}_1$ and $\vec{v}_2$ are linear combinations of $\vec{v}_3$.

   (c) Yes, the vectors $\vec{v}_1$ and $\vec{v}_2$ span $\mathbb{R}^2$ because these column vectors are linearly independent.

10. **Keep**.