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Math 308F C

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For this WebQ, you will need to refer to your textbook for a list of vectors v_1, v_2, v_3, v_4, v_5 in two-space and $u_0, u_1, u_2, u_3, u_4, u_5$ in three-space. These vectors are found at the beginning of the exercises for Section 1.7.

In each question, you will be asked whether or not a set of vectors is linearly independent or linearly dependent. If the set is linearly dependent, you will also be asked to write one of the vectors as a linear combination of the others.

For example, the set $\{v_1, v_5\}$ is linearly dependent, and $v_5 = 3v_1$.

Another example: the set $\{v_1, v_2, v_4\}$ is linearly dependent, and $v_2 = 1v_1 + 1v_4$. Or you could have said, $v_4 = 1v_1 + (-1)v_2$.

1/1 Is the set $\{v_1, v_3\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Correct

Answer:
Linearly dependent

0/1 If you answered that the set $\{v_1, v_3\}$ is linearly dependent, write one of the vectors as a linear combination of the others.

$v_3 = 2v_1$

Needs manual grading

Answer:

1/1 Is the set $\{v_2, v_3\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Correct

Answer:

Linearly independent

0/0 If you answered that the set $\{v_2, v_3\}$ is linearly dependent, write one of the vectors as a linear combination of the others.

NA

Needs manual grading

Answer:

1/1 Is the set $\{v_2, v_3, v_4\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Correct

Answer:

Linearly dependent

0/1 If you answered that the set $\{v_2, v_3, v_4\}$ is linearly dependent, write one of the vectors as a linear combination of the others.

$$v_3 = 2v_2 - 2v_4 \text{ since } -2v_2 + v_3 + 2v_4 = 0$$

Needs manual grading

Answer:

1/1 Is the set $\{u_3, u_4\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Correct

Answer:

Linearly independent

0/0 If you answered that the set $\{u_3, u_4\}$ is linearly dependent, write one of the vectors as a linear combination of the others.

NA

Needs manual grading

Answer:

1/1 Is the set $\{u_1, u_4, u_5\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Correct

Answer:

Linearly dependent

0/1 If you answered that the set $\{u_1, u_4, u_5\}$ is linearly dependent, write one of the vectors as a linear combination of the others.

$u_4 = -4u_5$ which = $-4u_5 + 0u_1$ if you wish to include all the vectors

Needs manual grading

Answer:

1/1 Is the set $\{u_0, u_1, u_4\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Correct

Answer:
Linearly independent

0/0 If you answered that the set $\{u_0, u_1, u_4\}$ is linearly dependent, write one of the vectors as a linear combination of the others.

NA

Needs manual grading

Answer:

1/1 Is the set $\{u_0, u_1, u_2, u_4\}$ linearly independent or linearly dependent?

- Linearly independent
 Linearly dependent

Questions or Comments?

Contact James King at king@math.washington.edu



Correct

Answer:
Linearly dependent