MATH 1554 Linear Algebra: Orthogonality

1. What is the definition of orthogonality?

A. Two vectors are orthogonal if they are perpendicular.
B. Two vectors are orthogonal if they are equal.
C. Two vectors are orthogonal if they are not equal.
D. Two vectors are orthogonal if they are not perpendicular.

2. Which of the following vectors are orthogonal?

A. (1, 0, 0) and (0, 1, 0)
B. (1, 0, 0) and (0, 0, 1)
C. (0, 1, 0) and (0, 0, 1)
D. (1, 1, 0) and (0, 1, 1)

3. Which of the following vectors are not orthogonal?

A. (1, 0, 0) and (0, 1, 0)
B. (1, 0, 0) and (0, 0, 1)
C. (0, 1, 0) and (0, 0, 1)
D. (1, 1, 0) and (0, 1, 1)

4. What is the dot product of two orthogonal vectors?

A. 0
B. 1
C. -1
D. It is undefined.

5. What is the dot product of two vectors that are not orthogonal?

A. 0
B. 1
C. -1
D. It is undefined.

Answer Key:

1. A
2. A, B, and C
3. D
4. A
5. D