Assignment 9

Due on 2021-03-04, 23:59 GMT

Instructions to candidates:

- In questions involving multiple choices, one or more than one option may be correct. Fill all the correct options. Do not copy the statements in the answer area.
- Unless mentioned otherwise, all answers to be presumed to be over the field of reals except otherwise mentioned.
- The marks for a question are always shown in the brackets immediately following the question.

5. What is the following matrix represent an orthogonal projection in R^n? 

\[
\begin{bmatrix}
1 & 0 \\
0 & 1
\end{bmatrix}
\]

- Yes, Answer is correct.
- No, Answer is incorrect.

5. What is the following matrix represent an orthogonal projection in R^n? 

\[
\begin{bmatrix}
1 & 1 \\
1 & 1
\end{bmatrix}
\]

- Yes, Answer is correct.
- No, Answer is incorrect.

11. Which of the following statements are true? 

\[
P(x) = y, \quad \text{for every } x \epsilon \mathbb{R} \\
Q(x) = x^2, \quad \text{for every } x \epsilon \mathbb{R}
\]

- Yes, Given answers are correct.
- Yes, But Given answers are not correct.
- No, Given answers are not correct.

15. Let \( f(x) = e^x \) be a continuous and monotonic function from \( x > 0 \) to \( x \). Which of the following statements are true? 

- \( f(x) \) is an increasing function.
- \( f(x) \) is a decreasing function.
- \( f(x) \) is a constant function.

- Yes, Given answers are correct.
- Yes, But Given answers are not correct.
- No, Given answers are not correct.