Oiulin Fan

ma217-w24 Assignment readQ7-5 due 04/15/2024 at 08:01am EDT

Problem 1. (1 point)

If $z_1 = 2 + 2i$ and $z_2 = 3 - 3i$, find each of the following:

$$\overline{z}_1 = \underline{\qquad} +i \underline{\qquad}$$

$$|z_1z_2| = \underline{\qquad} +i \underline{\qquad}$$

$$\arg(z_2) = \underline{\qquad} \quad \iota$$

Answer(s) submitted:

- 12
- 0
- 2
- 12
- 0
- $tan^{-1}(-1)$

submitted: (correct) recorded: (correct)

Problem 2. (1 point)

Compute the following:

$$\left(\cos\left(\frac{5\pi}{4}\right) + i\sin\left(\frac{5\pi}{4}\right)\right)^7 = \underline{\qquad} + i\underline{\qquad}$$

Answer(s) submitted:

$$-\frac{\sqrt{2}}{2}$$

•
$$\frac{\sqrt{2}}{2}$$

submitted: (correct)

recorded: (correct)

Problem 3. (1 point)

If
$$A = \begin{bmatrix} 2 & -1 \\ 1 & 2 \end{bmatrix}$$
, then its eigenvalues are

and A is diagonalized by the matrix

$$R = \begin{bmatrix} - & - \\ - & - \end{bmatrix}$$

Answer(s) submitted:

$$\bullet \begin{array}{c}
1 \\
\bullet \\
-i \\
i
\end{array}$$

submitted: (correct) recorded: (correct)

1

Generated by ©WeBWorK, http://webwork.maa.org, Mathematical Association of America