

QUESTION

If $z = 1 + j$ find the real and imaginary parts of $3z^* - z$.

ANSWER

$$z = 1 + j, z^* = 1 - j, 3z^* - z = 3(1 - j) - (1 + j) = 2 - 4j$$

$$\operatorname{Re}(3z^* - z) = 2, \operatorname{Im}(3z^* - z) = -4$$