Due Date: 07.11.2019 - Monday - Morning 10:00 AM

HOMEWORK 3

Que: (45 p) Assume that $x, y \in R$ and $z = x + iy \in C$ and answer the followings:

1-) Find the linear transform which converts $Re\{z\} \ge 2$ area to inside the unit circle with center (0,1).

2-) Find the linear transform which converts inside the circle has a radius 4 and center is (-4,0) to $Im\{z\} \ge -1$.

Que: (45 p) Assume that $x, y \in R$ and $z = x + iy \in C$ and answer the followings:

1-) Find the image of $Re\{z\} \ge 8$, under the transform of $w = \frac{z}{2iz+2}$

2-) Find the image of the area between $|z + 4i| \le 4$ and $|z + i| \ge 1$. Under the transform of $w = \frac{i}{2}$

Que: (10 p) Assume that $x, y \in R$ and $z = x + iy \in C$ and answer the followings:

1-) Find the image of $a \le x \le b$ and $c \le y \le d$ rectangle region under the transform of $w = e^z$.