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Problem 4.5

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Homework due Nov 14, 2020 19:00 EST

Problem 4.5

0.0/3.0 points (graded)

Let D be an entire complex plane with branch cuts along the rays $[-1,-1+i\infty]$ and $[1,+\infty]$. Given the function:

$$arphi\left(z
ight)=\ln\left(1-z^{2}
ight),\;\;arphi\left(0
ight)=-2\pi i.$$

Find:

- 1) arphi (-2);
- 2) $arphi\left(-i
 ight)$;
- 3) $arphi\left(rac{-1+\sqrt{3}i}{2}
 ight)$.

Use i for complex unity, and ln() for \ln (). Avoid using square roots or powers inside logarithms.

1) $arphi\left(-2
ight) =% {\displaystyle\int\limits_{-\infty}^{\infty}} \left[{\displaystyle\int\limits_{-$

2) $arphi\left(-i
ight) =% {\displaystyle\int\limits_{i}^{\infty }} {\displaystyle\int\limits_{i}^{\infty }$

 $arphi\left(rac{-1+\sqrt{3}i}{2}
ight)$

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