COMPLEX INTEGRATION

Important Question Bank

Designed By

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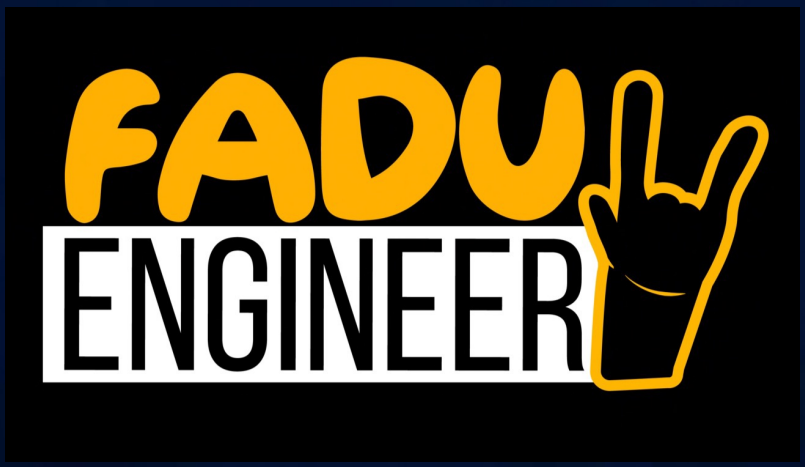

Important Questions

① Evaluate: $\int_C (y - x - 3x^2 i)\,dz$, where C is a straight line from $z = 0$ to $z = 1 + i$.

② Evaluate: $\int_C (z^2 - 2\bar{z} + 1)\,dz$, where C is the circle of $x^2 + y^2 = 2$.

③ Evaluate: $\int_0^{1+2i} z^2\,dz$ along the curve $2x^2 = y$.

④ Evaluate: $\int_C z^2\,dz$ from $P(1,1)$ to $Q(2,4)$ where,

(i) C is curve $y = x^2$.

(ii) C is the line $y = 3x - 2$

(iii) C is the curve $x = t, y = t^2$.

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⑤ Evaluate: $\int_0^{1+i} z^2\,dz$, along (i) line $y=x$,

(ii) the parabola $x=y^2$, is the line integral independent of the path?

⑥ Evaluate: $\int_C (z-z^2)\,dz$, where C is the upper half of circle $|z|=1$. what is the value of the integral for the lower half of Same circle.

⑦ Evaluate: $\int_C |z|\,dz$, where C is the left half of unit circle $|z|=1$ from $z=-i$ to $z=i$.

⑧ Evaluate: $\int_C \frac{2z+3}{z}\,dz$, where C is

(i) upper half of circle $|z|=2$.

(ii) Lower half of circle $|z|=2$.

(iii) whole circle in anticlockwise.