Question 1 Correct

Mark 1.00 out of 1.00



The integral $\int_{E=2\pi}^{\infty} \frac{\sin z}{(z-\pi)^2} dz$ where the curve is

taken anti-clockwise, equals ____

Select one:

- a. -2πi
- b. 2πi
- d. 4πi

The correct answer is: $-2\pi i$

Correct

Mark 1.00 out of 1.00



If f is analytic within and on a simple closed, positively oriented contour C and if z o is any point interior to C, then $\int_{C} \frac{f(z)}{(z-z_0)^{n+1}} dz$ equals:

Select one:

$$\frac{2\pi i}{n!} f^n(z_0)$$



b.
$$\frac{n!}{2\pi i} f^n(z_0)$$

$$\frac{2\pi i}{n+1}f^n(z_0)$$

a.
$$\frac{2\pi i}{n!} f^n(z_0)$$
b.
$$\frac{n!}{2\pi i} f^n(z_0)$$
c.
$$\frac{2\pi i}{n+1} f^n(z_0)$$
d.
$$\frac{2\pi i}{(n+1)!} f^n(z_0)$$

The correct answer is:
$$\frac{2\pi i}{n!} f^n(z_0)$$

Correct

Mark 1.00 out of 1.00



The value of the integral $\int_{c}^{c} \frac{dz}{(z-a)^{10}}$, where C is

$$|z - a| = 3 \text{ is}$$
:

Select one:

- a. 0
- b. 2πi
- c. πi
- d. None of the above

The correct answer is: 0

Correct

Mark 1.00 out of 1.00



The integral $\int_{C}^{\infty} \frac{ze^{z}}{z^{2}+9} dz$ has non zero value if C is

Select one:

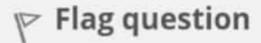
- a. |z|=1
- b. |z|=2
- c. |z-1|=1
- d. |z|=4

1

The correct answer is: |z|=4

Correct

Mark 1.00 out of 1.00



 $f(z) = \frac{1}{z+1} - \frac{2}{z+3}$. If C is a counterclockwise path in the z-plane such that |z+1| = 1, the value of $\frac{1}{2\pi i} \iint_{\mathcal{E}} f(z) dz$ is

Select one:

- a. -2
- b. -1
- @ c. 1
- d. 2

The correct answer is: 1

Correct

Mark 1.00 out of 1.00



Integration of the complex function,

$$f(z) = \frac{z^2}{z^2 - 1}$$
 in the counterclockwise direction,

around |z - 1| = 1 is_____

Select one:

- a. -πi
- b. 0
- · c. πί
- d. 2πi

The correct answer is: mi

Correct

Mark 1.00 out of 1.00



The only bounded entire functions are:

Select one:

- a. Real valued functions
- b. harmonic functions
- o. Constant functions



d. Exponential function

The correct answer is: Constant functions

Correct

Mark 1.00 out of 1.00



If f is continuous in a domain D and if

 $\int_{C} f(z)dz = 0$ for every simple closed positively

oriented contour C in D, then:

Select one:

- a. fis a constant in D
- b. f is analytic in D



- c. f is real valued in D
- d. f is purely imaginary in D

The correct answer is: f is analytic in D

Correct

Mark 1.00 out of 1.00



 $\int \frac{z^2 - 4}{z^2 + 4} dz$ evaluated anticlockwise around the circle |z - i| = 2 is

Select one:

- a. -4π
- b. 0
- \circ c. $2+\pi$
- d. 2+2i

The correct answer is: -4π

Correct

Mark 1.00 out of 1.00



Converse of Cauchy's integral theorem is known as:

Select one:

- a. Liouville's theorem
- b. Goursat's theorem
- c. Morera's theorem



d. Euler's theorem

The correct answer is: Morera's theorem