Exam

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Calculate	e the flux of the field F acr	oss the closed plane curve	С.		
1)	1) $F = xi + yj$; the curve C is the closed counterclockwise path around the rectangle with vertices at				
	(0, 0), (4, 0), (4, 3), and (0,	3)			
	A) 24	В) /	C) 25	D) 0	
Calculate the flow in the field F along the path C.					
2)	2) $F = (x - y)i - (x^2 + y^2)j$; C is curve from (4, 0) to (-4, 0) on the upper half of the circle $x^2 + y^2 = 16$				2)
	Α) 8π	B) - 8π	C) $\frac{16\pi - 1}{4}$	D) 16π	
Test the vector field F to determine if it is conservative.					
3)) F = xyi + yj + zk				3)
	A) Conservative		B) Not conservative		
4]) F = $\left(ze^{X+Y} - \frac{1}{x}\right)i + ze^{X+Y}j$	+ е ^{х+у} к			4)
	A) Not conservative		B) Conservative		
Find the potential function f for the field F					
					->
5	$F = \frac{1}{z} - 2J - \frac{1}{z^2}K$				5)
	A) $f(x, y, z) = \frac{x}{z} + C$		B) $f(x, y, z) = \frac{x}{z} - 2y + C$		
	C) $f(x, y, z) = \frac{x}{z} - 2 + C$		D) $f(x, y, z) = \frac{2x}{z} - 2y +$	С	
Evaluate. The differential is exact.					
6)	$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \frac{1}{x} dx + \frac{1}{y} dy + \frac{1}{y} dy$	$\frac{1}{z}$ dz			6)
	(1, 1, 1) A) In 12	B) In 20	C) In 60	0 (כו	
	/ / / / / / / / / / / / / / / / / / / /	b) 111 20	0) 11 00	2) 0	
Using Green's Theorem, compute the counterclockwise circulation of F around the closed curve C.					
7)	F = (x - y)i + (x + y)j; C is	the triangle with vertices a	t (0, 0), (4, 0), and (0, 9)		7)
	A) 0	B) 72	C) 324	D) 30	
Using Green's Theorem, find the outward flux of F across the closed curve C.					
8) $F = xyi + xj$; C is the triangle with vertices at (0, 0), (5, 0), and (0, 3)					8)
	A) $\frac{15}{2}$	B) 0	C) 20	D) - 5	