Given that  $w=x^2+y^2+z^2$  and z(x,y) satisfies  $z^3-xy+yz+y^3=1$ . Then choose the correct option(s).

Select one or more:

$$lacksquare$$
 a.  $rac{\partial w}{\partial x}$  at  $(2,-1,1)$  is  $-3$ 

b.  $\dfrac{\partial w}{\partial y}$  at (2,-1,1) is -4

c. 
$$rac{\partial w}{\partial y}$$
 at  $(2,-1,1)$  is  $4$ 

$$lacksquare$$
 d.  $\dfrac{\partial w}{\partial x}$  at  $(2,-1,1)$  is  $3$ 

Your answer is incorrect.

The correct answers are:  $\dfrac{\partial w}{\partial x}$  at (2,-1,1) is

, 
$$\dfrac{\partial w}{\partial y}$$
 at  $(2,-1,1)$  is  $-4$ 

## Question 2

Correct

Mark 2.00 out of 2.00



Flag question

For what values of a, b, c the directional derivative of  $\phi(x,y,z)=axy+byz+cxz$ at (1, 1, 1) has the maximum magnitute 4 in the direction parallel to X-axis.

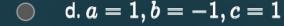
Select one:

$$igorplus a.\ a = -2, b = 2, c = -2$$

$$lacksquare$$
 b.  $a=2, b=2, c=2$ 

$$lacksquare$$
 c.  $a=2, b=-2, c=2$ 





Your answer is correct.

The correct answer ls: a=2,b=-2,c=2

Question 3

Incorrect

Mark 0.00 out of 2.00



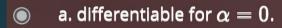
Flag question

For  $\alpha \in \mathbb{R}$ , defined

$$f(x,y) = \left\{ egin{aligned} & \left| x 
ight|^lpha x^2 y \ x^4 + y^2 \end{aligned}, & (x,y) 
eq (0,0) \ 0, & x = y = 0 \end{aligned} 
ight..$$

Then at (0,0) the function f is

Select one:





- b. continuous for  $\alpha = 1$ .
- $\bigcirc$  c. continuous for  $\alpha=0$ .
- d. continuous for lpha=-2 .

Your answer is incorrect.

The correct answer is: continuous for  $\alpha \equiv 1$ .

Mark 0.00 out of 2.00

Question 4

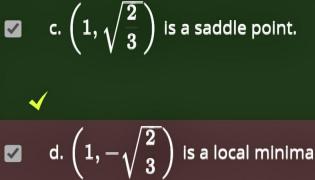
Incorrect

Let  $\overline{f(x,y)}=x^3y^2+x^2-y^2$  . Then choose the correct option(s).

Select one or more:

a. The function has exactly two critical points.

b. (0,0) is a local maxima point.



point.

Your answer is incorrect. The correct answers are:  $\left(1,\sqrt{\frac{2}{3}}\right)$  is a saddle point.

, (0,0) is a local maxima point.

Choose the correct option(s).

Select one or more:

a. If 
$$z=xy+x+y+1, x=\cos t, y=\sin t,$$
 then  $\dfrac{dz}{dt}$  at  $t=\dfrac{\pi}{4}$  is  $2$ .

b. If 
$$\lim_{(x,y) o(0,0)}f(x,y)=l$$
 and  $l\in\mathbb{R}$ , then  $\lim_{x o0}\lim_{y o0}f(x,y)$  may not exist.

c. The existence of partial derivatives does not guarantee the existence of directional derivatives in all directions.

d. 
$$\lim_{(x,y) o(0,0)}rac{(x-y^2)^8}{x^8+y^{16}}$$
 exists.

Your answer is correct.

The correct answers are: The existence of partial derivatives does not guarantee the existence of directional derivatives in all directions., if  $\lim_{(x,y) o (0,0)} f(x,y) = l$  and  $l \in \mathbb{R}$ , then  $\lim_{x o 0} \lim_{y o 0} f(x,y)$  may not exist.