**Quiz Chapter 11 (B1-SP2011)**

Top of Form

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Question 1

Marks: 1

Find the direction in which the function [f(x,y)=x^4y-x^3y^2](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f%28x%2Cy%29%3Dx%5E4y-x%5E3y%5E2)decreases fastest at the point (2, -1).

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. (43, -23) |  |
|  | b. (44, -32) |  |
|  | c. (27, -33) |  |
|  | d. (43, -63) |  |

Question 2

Marks: 1

Find the limit.

[\lim_{(x,y)\to (2,2)} e^{-x^2-y^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Clim_%7B%28x%2Cy%29%5Cto+%282%2C2%29%7D+e%5E%7B-x%5E2-y%5E2%7D)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [e^8](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?e%5E8) |  |
|  | b. [e^{-8}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?e%5E%7B-8%7D) |  |
|  | c. 0 |  |
|  | d. 1 |  |

Question 3

Marks: 1

Evaluate [\frac{\partial w}{\partial t}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial+w%7D%7B%5Cpartial+t%7D)at t = (7/2)π for the function w(x, y, z) = xy/z; x = sin t, y = cost, z = t2.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [-(2/9\pi^2)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?-%282%2F9%5Cpi%5E2%29) |  |
|  | b. [-(1/9\pi)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?-%281%2F9%5Cpi%29) |  |
|  | c. [2/9\pi^2)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2%2F9%5Cpi%5E2%29) |  |
|  | d. [-(4/49\pi^2)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?-%284%2F49%5Cpi%5E2%29) |  |

Question 4

Marks: 1

Find the limit.

[\displaystyle\lim_{(x,y)\to (1,1)} \ln |\frac{x+y}{xy}|](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cdisplaystyle%5Clim_%7B%28x%2Cy%29%5Cto+%281%2C1%29%7D+%5Cln+%7C%5Cfrac%7Bx%2By%7D%7Bxy%7D%7C)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. -ln 2 |  |
|  | b. No limit |  |
|  | c. ln 2 |  |
|  | d. 0 |  |

Question 5

Marks: 1

At what point is the following function a local minimum?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. (0, 0) |  |
|  | b. (6, 0) |  |
|  | c. (3, 0) |  |
|  | d. ( 6, 3) |  |
|  | e. (6, -3) |  |

Question 6

Marks: 1

Find [\displaystyle\frac{\partial^2 f}{\partial x\partial y}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cdisplaystyle%5Cfrac%7B%5Cpartial%5E2+f%7D%7B%5Cpartial+x%5Cpartial+y%7D)for   
f(x, y) = xy2 + yex2 + 5

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\frac{\partial^2 f}{\partial x\partial y}=y+2xe^{x^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial%5E2+f%7D%7B%5Cpartial+x%5Cpartial+y%7D%3Dy%2B2xe%5E%7Bx%5E2%7D) |  |
|  | b. [\frac{\partial^2 f}{\partial x\partial y}=2y+2xe^{x^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial%5E2+f%7D%7B%5Cpartial+x%5Cpartial+y%7D%3D2y%2B2xe%5E%7Bx%5E2%7D) |  |
|  | c. [\frac{\partial^2 f}{\partial x\partial y}=2y+2xye^{x^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial%5E2+f%7D%7B%5Cpartial+x%5Cpartial+y%7D%3D2y%2B2xye%5E%7Bx%5E2%7D) |  |
|  | d. [\frac{\partial^2 f}{\partial x\partial y}=2y+e^{x^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial%5E2+f%7D%7B%5Cpartial+x%5Cpartial+y%7D%3D2y%2Be%5E%7Bx%5E2%7D) |  |

