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

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Question**1**

Marks: 1

At what points is the given function continuous?f(x, y) = ex+y

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. All (x, y) ≠  (0, 0) |  |
|  | b. All (x, y) |  |
|  | c. All (x, y) in the first quadrant |  |
|  | d. All (x, y) satisfying x + y > 0 |  |

Question**2**

Marks: 1

Find the dimensions of a rectangular box of maximum volume such that the sum of the lengths of its 12 edges is 96.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 32, 32, 32 |  |
|  | b. 8, 8, 8 |  |
|  | c. 4, 8, 16 |  |
|  | d. 8, 96, 8 |  |

Question**3**

Marks: 1

Evaluate the gradient of f at the point *P*.   
  
[f(x,y,z)=xy^2z^3, \, P(-1, 3, -1)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f%28x%2Cy%2Cz%29%3Dxy%5E2z%5E3%2C+%5C%2C+P%28-1%2C+3%2C+-1%29)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. {-16, 8, -27} |  |
|  | b. {-10, 8, -40} |  |
|  | c. {-10, 8, -24} |  |
|  | d. {-9, 6, -27} |  |

Question**4**

Marks: 1

Use the Chain Rule to find [\frac{\partial z}{\partial s}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial+z%7D%7B%5Cpartial+s%7D)  
  
[z=e^r\cos\theta, \, r=10st, \, \theta=\sqrt{s^2+t^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?z%3De%5Er%5Ccos%5Ctheta%2C+%5C%2C+r%3D10st%2C+%5C%2C+%5Ctheta%3D%5Csqrt%7Bs%5E2%2Bt%5E2%7D). 

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\frac{\partial z}{\partial s}=e^t\big(t\cos\theta-\frac{s\sin\theta}{\sqrt{s^2+t^2}}\big)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial+z%7D%7B%5Cpartial+s%7D%3De%5Et%5Cbig%28t%5Ccos%5Ctheta-%5Cfrac%7Bs%5Csin%5Ctheta%7D%7B%5Csqrt%7Bs%5E2%2Bt%5E2%7D%7D%5Cbig%29) |  |
|  | b. [\frac{\partial z}{\partial s}=e^r\big(\cos\theta-\frac{s\sin\theta}{\sqrt{s^2+t^2}}\big)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial+z%7D%7B%5Cpartial+s%7D%3De%5Er%5Cbig%28%5Ccos%5Ctheta-%5Cfrac%7Bs%5Csin%5Ctheta%7D%7B%5Csqrt%7Bs%5E2%2Bt%5E2%7D%7D%5Cbig%29) |  |
|  | c. [\frac{\partial z}{\partial s}=e^r\big(10t\cos\theta+\frac{s\sin\theta}{\sqrt{s^2+t^2}}\big)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial+z%7D%7B%5Cpartial+s%7D%3De%5Er%5Cbig%2810t%5Ccos%5Ctheta%2B%5Cfrac%7Bs%5Csin%5Ctheta%7D%7B%5Csqrt%7Bs%5E2%2Bt%5E2%7D%7D%5Cbig%29) |  |
|  | d. [\frac{\partial z}{\partial s}=e^r\big(10t\cos\theta-\frac{s\sin\theta}{\sqrt{s^2+t^2}}\big)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cfrac%7B%5Cpartial+z%7D%7B%5Cpartial+s%7D%3De%5Er%5Cbig%2810t%5Ccos%5Ctheta-%5Cfrac%7Bs%5Csin%5Ctheta%7D%7B%5Csqrt%7Bs%5E2%2Bt%5E2%7D%7D%5Cbig%29) |  |

Question**5**

Marks: 1

At what points is the given function continuous?f(x, y) = tan (x + y)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. All (x, y) such that [x+y\ne (2n+1)\pi/2](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?x%2By%5Cne+%282n%2B1%29%5Cpi%2F2) , where n is an integer |  |
|  | b. All (x, y) ≠  (0, 0) |  |
|  | c. All (x, y) |  |
|  | d. All (x, y) ≠  [(\pi/2,\pi/2)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%28%5Cpi%2F2%2C%5Cpi%2F2%29) |  |

Question**6**

Marks: 1

Find [f_x](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f_x) for   
[\displaystyle f(x,y)=\int_y^x \cos(t^8)\, dt](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Cdisplaystyle+f%28x%2Cy%29%3D%5Cint_y%5Ex+%5Ccos%28t%5E8%29%5C%2C+dt)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\cos(t^8)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Ccos%28t%5E8%29) |  |
|  | b. [\cos(x^8)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Ccos%28x%5E8%29) |  |
|  | c. None of the other choices is correct |  |
|  | d. [\sin(x^8)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?%5Csin%28x%5E8%29) |  |

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