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

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Question**1**

Marks: 1

Let f(x, y) = x2 + y - ex+y. Find [\displaystyle\frac{\partial^2 f}{\partial x^2}-\frac{\partial^2 f}{\partial y^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle\frac%7b\partial%5e2+f%7d%7b\partial+x%5e2%7d-\frac%7b\partial%5e2+f%7d%7b\partial+y%5e2%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 2 |  |
|  | b. [2-2e^{x+y}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2-2e%5e%7bx+y%7d) |  |
|  | c. [2+2e^{x+y}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2+2e%5e%7bx+y%7d) |  |
|  | d. 0 |  |

Question**2**

Marks: 1

Find the limit.

[\displaystyle\lim_{(x,y)\to (32, 32),\, x+ y\ne 64}\,\,\,\frac{x+y-64}{\sqrt{x+y}-8}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle\lim_%7b(x,y)\to+(32,+32),\,+x++y\ne+64%7d\,\,\,\frac%7bx+y-64%7d%7b\sqrt%7bx+y%7d-8%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 16 |  |
|  | b. 8 |  |
|  | c. 0 |  |
|  | d. No limit |  |

Question**3**

Marks: 1

At what point is the following function a local minimum?   
  
[f(x,y)=6x^2+3y^2](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(x,y)=6x%5e2+3y%5e2)

Choose one answer.

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

Question**4**

Marks: 1

Find the directional derivative of the function at the given point in the direction of the vector ***v***.  
  
[f(x,y)=-7+10x\sqrt{y},\, (5, 16),\, v=(-4, 3)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(x,y)=-7+10x\sqrt%7by%7d,\,+(5,+16),\,+v=(-4,+3))

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. -28.25 |  |
|  | b. 34.36 |  |
|  | c. -27.45 |  |
|  | d. none of these |  |

Question**5**

Marks: 1

Find the limit.

[\displaystyle\lim_{(x,y)\to (1,-1), x\ne y}\,\,\,\frac{5x^2+10xy+5y^2}{x+y}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle\lim_%7b(x,y)\to+(1,-1),+x\ne+y%7d\,\,\,\frac%7b5x%5e2+10xy+5y%5e2%7d%7bx+y%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 1/2 |  |
|  | b. 0 |  |
|  | c. 1 |  |
|  | d. No limit |  |

Question**6**

Marks: 1

Evaluate [\frac{\partial u}{\partial x}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\frac%7b\partial+u%7d%7b\partial+x%7d) at (x, y, z) = (4, 4, 1) for the function u(p, q, r) = p2 - q2 - r; p = xy, q = y2, r = xz.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 129 |  |
|  | b. 33 |  |
|  | c. 31 |  |
|  | d. 127 |  |

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