**Advanced Mathematics 1 (Examination Office)**

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**Quiz Chapter 1**

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Question 1

Marks: 1

State the domain. [f(t)=4t+\sqrt{16-t^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(t)=4t+\sqrt%7b16-t%5e2%7d)  
  
  
  
Select the correct answer

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. (-4,4) |  |
|  | b. (-3,4) |  |
|  | c. [-4,4] |  |
|  | d. [-3.4) |  |
|  | e. [-4,4) |  |
|  | f. (-4,4] |  |

Question 2

Marks: 1

Consider the function [f(x)=\frac{1}{2+e^{1/x}}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(x)=\frac%7b1%7d%7b2+e%5e%7b1/x%7d%7d). Find the value of [\lim_{x\to 0-}f(x)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+0-%7df(x)).   
  
Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. -0.4 |  |
|  | b. 0.7 |  |
|  | c. 0.5 |  |
|  | d. 0.9 |  |
|  | e. 0.2 |  |

Question 3

Marks: 1

Use continuity to evaluate the limit. [\lim_{x\to -17\pi}\sin(x+3\sin x)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+-17\pi%7d\sin(x+3\sin+x))  
  
  
  
Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 0 |  |
|  | b. [\infty](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\infty) |  |
|  | c. -1 |  |
|  | d. 1 |  |
|  | e. |  |

Question 4

Marks: 1

Find the limit. [\lim_{x\to \infty}\,\, (\sqrt{x^2+ax}-\sqrt{x^2+bx})](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+\infty%7d\,\,+(\sqrt%7bx%5e2+ax%7d-\sqrt%7bx%5e2+bx%7d))  
  
  
Select the correct answer

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. -(a+b)/2 |  |
|  | b. (a+b)/2 |  |
|  | c. None of the other choices is correct |  |
|  | d. (a-b)/2 |  |
|  | e. (b-a)/2 |  |

Question 5

Marks: 1

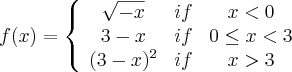
Choose an equation from the following that expresses the fact that a function *f* is continuous at the number 6.   
  
Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\lim_{x\to \infty} f(x)=f(6)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+\infty%7d+f(x)=f(6)) |  |
|  | b. [\lim_{x\to 6} f(x)=0](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+6%7d+f(x)=0) |  |
|  | c. [\lim_{x\to 6} f(x)=\infty](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+6%7d+f(x)=\infty) |  |
|  | d. [\lim_{x\to \infty} f(x)=6](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+\infty%7d+f(x)=6) |  |
|  | e. [\lim_{x\to 6} f(x)=f(6)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+6%7d+f(x)=f(6)) |  |

Question 6

Marks: 1

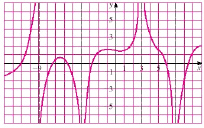
Determine wheremc019-1.jpgis discontinuous.  
  
[](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(x)=\left\%7b\begin%7barray%7d%7bccc%7d\sqrt%7b-x%7d+&amp;amp;+if&amp;amp;+x&amp;lt;0\\3-x&amp;amp;+if+&amp;amp;+0\leq+x&amp;lt;3\\(3-x)%5e2&amp;amp;+if+&amp;amp;+x&amp;gt;3\end%7barray%7d\right.)  
  
  
  
Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 0; -3 |  |
|  | b. -3 |  |
|  | c. 3 |  |
|  | d. 0; 3 |  |
|  | e. 0 |  |

Question 7

Marks: 1

  
For the function f whose graph is shown, state the following.   
[\lim_{x\to -4} f(x)](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bx\to+-4%7d+f(x))  
  
Select the correct answer

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 2 |  |
|  | b. 0 |  |
|  | c. Does not exist |  |
|  | d. ∞ |  |
|  | e. ∞ |  |
|  | f. -2 |  |