**Quiz Chapter 6 (B1-SP2011)**

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<div> <h2 class="main">JavaScript must be enabled to continue!</h2> </div>

Question 1

Marks: 1

Use Simpson's Rule with n = 4 steps to estimate the integral.[\int_0^2 xdx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_0%5e2+xdx)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 4 |  |
|  | b. 2 |  |
|  | c. 1 |  |
|  | d. C:\Users\hp\Desktop\Quiz\MAC101-Exam  Quiz Chapter 6 (B1-SP2011)_files\f1d25g1.jpg |  |

Question 2

Marks: 1

Evaluate the integral.

[\int_0^{\pi/2} \sin 7t\, \sin 6t\, dt](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_0%5e%7b\pi/2%7d+\sin+7t\,+\sin+6t\,+dt)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 6/13 |  |
|  | b. 4/9 |  |
|  | c. 1/2 |  |
|  | d. 7/13 |  |

Question 3

Marks: 1

Evaluate the integral.

[\int\frac{dx}{x\sqrt{x^2+6}}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int\frac%7bdx%7d%7bx\sqrt%7bx%5e2+6%7d%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\ln\left|\frac{\sqrt{x^2+6}-\sqrt{6}}{x}\right|+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\ln\left|\frac%7b\sqrt%7bx%5e2+6%7d-\sqrt%7b6%7d%7d%7bx%7d\right|+C) |  |
|  | b. [\ln\left|\frac{\sqrt{x^2+6}-6}{x}\right|+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\ln\left|\frac%7b\sqrt%7bx%5e2+6%7d-6%7d%7bx%7d\right|+C) |  |
|  | c. [\ln\left|\frac{\sqrt{x^2+6}-x}{x}\right|+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\ln\left|\frac%7b\sqrt%7bx%5e2+6%7d-x%7d%7bx%7d\right|+C) |  |
|  | d. [(1\sqrt{6})\ln\left|\frac{\sqrt{x^2+6}}{x^2}\right|+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1\sqrt%7b6%7d)\ln\left|\frac%7b\sqrt%7bx%5e2+6%7d%7d%7bx%5e2%7d\right|+C) |  |

Question 4

Marks: 1

Determine whether the improper integral converges or diverges.[\displaystyle\int_1^\infty\frac{|\sin x|}{x^2}dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle\int_1%5e\infty\frac%7b|\sin+x|%7d%7bx%5e2%7ddx)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Diverges |  |
|  | b. Converges |  |

Question 5

Marks: 1

Which of the following is the **correct partial fraction form** of the given function (DO NOT evaluate the coefficients A, B, C, ...)  
  
[\displaystyle f(x)=\frac{x^3-4x-10}{x^2-x-6}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle+f(x)=\frac%7bx%5e3-4x-10%7d%7bx%5e2-x-6%7d)  
  
(i) [\displaystyle\frac{A}{x+2}+\frac{B}{x-3}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle\frac%7bA%7d%7bx+2%7d+\frac%7bB%7d%7bx-3%7d)  
  
(ii) [\displaystyle x+\frac{A}{x+2}+\frac{B}{x-3}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle+x+\frac%7bA%7d%7bx+2%7d+\frac%7bB%7d%7bx-3%7d)  
  
(iii) [\displaystyle x^2+\frac{A}{x+2}+\frac{B}{x-3}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle+x%5e2+\frac%7bA%7d%7bx+2%7d+\frac%7bB%7d%7bx-3%7d)  
  
(iv) [\displaystyle x^3+\frac{A}{x+2}+\frac{B}{x-3}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle+x%5e3+\frac%7bA%7d%7bx+2%7d+\frac%7bB%7d%7bx-3%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. (iii) |  |
|  | b. (iv) |  |
|  | c. (ii) |  |
|  | d. (i) |  |
|  | e. None of the other choices is correct |  |

Question 6

Marks: 1

Evaluate the following integral.

[\displaystyle\int_{-\infty}^{-7}\frac{dx}{\sqrt{8-x}}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\displaystyle\int_%7b-\infty%7d%5e%7b-7%7d\frac%7bdx%7d%7b\sqrt%7b8-x%7d%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 1/2 |  |
|  | b. 1/5 |  |
|  | c. divergent |  |
|  | d. 1 |  |

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