**Advanced Mathematics 1 (Examination Office)**

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**Quiz Chapter 4**

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Question 1

Marks: 1

Find the general indefinite integral.

[\int\frac{\sin 14t}{\sin 7t}dt](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int\frac%7b\sin+14t%7d%7b\sin+7t%7ddt)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [(1/7)\cos 7t+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1/7)\cos+7t+C) |  |
|  | b. [-(2/7)\sin 7t+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?-(2/7)\sin+7t+C) |  |
|  | c. [(2/7)\sin 7t+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(2/7)\sin+7t+C) |  |
|  | d. [(2/7)\cos 7t+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(2/7)\cos+7t+C) |  |

Question 2

Marks: 1

Use the Midpoint Rule with *n* = 4 to approximate the integral.

[\int_1^2\sqrt{4+t^2}dt](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_1%5e2\sqrt%7b4+t%5e2%7ddt)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 2.99 |  |
|  | b. 2.51 |  |
|  | c. 4.24 |  |
|  | d. 1.85 |  |

Question 3

Marks: 1

Express the limit as a definite integral on the given interval.

[\lim_{n\to \infty}\sum_{i=1}^n4r_i\sin 
r_i\Delta r,\,\,\, [4, 9]](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\lim_%7bn\to+\infty%7d\sum_%7bi=1%7d%5en4r_i\sin+r_i\Delta+r,\,\,\,+%5b4,+9%5d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\int_4^9 4x\cos x  dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_4%5e9+4x\cos+x+dx) |  |
|  | b. [\int_4^9 x\sin x dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_4%5e9+x\sin+x+dx) |  |
|  | c. None of these |  |
|  | d. [\int_4^9 4r\sin r  dr](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_4%5e9+4r\sin+r+dr) |  |

Question 4

Marks: 1

If [F(x)=\int_1^xf(t)\, dt](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?F(x)=\int_1%5exf(t)\,+dt), where [f(t)=\int_1^{t^2}\frac{\sqrt{2+u^2}}{u}du](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(t)=\int_1%5e%7bt%5e2%7d\frac%7b\sqrt%7b2+u%5e2%7d%7d%7bu%7ddu), find F’’(2).

Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [6\sqrt{3}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?6\sqrt%7b3%7d) |  |
|  | b. [(3/2)\sqrt{2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(3/2)\sqrt%7b2%7d) |  |
|  | c. [3\sqrt{3}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?3\sqrt%7b3%7d) |  |
|  | d. [3\sqrt{2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?3\sqrt%7b2%7d) |  |

Question 5

Marks: 1

Evaluate the indefinite integral.

[\int\cos^4 x\sin
 x\, dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int\cos%5e4+x\sin+x\,+dx)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [(-1/5)\cos^5 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(-1/5)\cos%5e5+x+C) |  |
|  | b. [(1/5)\cos^5 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1/5)\cos%5e5+x+C) |  |
|  | c. [(-1/5)\sin^5 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(-1/5)\sin%5e5+x+C) |  |
|  | d. [(1/5)\sin^5 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1/5)\sin%5e5+x+C) |  |

Question 6

Marks: 1

Evaluate the indefinite integral.

[\int\cos^8 x\sin
 x\, dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int\cos%5e8+x\sin+x\,+dx)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [(1/9)\cos^9 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1/9)\cos%5e9+x+C) |  |
|  | b. [(1/9)\sin^9 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1/9)\sin%5e9+x+C) |  |
|  | c. [-(1/9)\cos^9 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?-(1/9)\cos%5e9+x+C) |  |
|  | d. [-(1/9)\sin^9 x+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?-(1/9)\sin%5e9+x+C) |  |





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