**1**

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

Question**2**

Marks: 1

Find the derivative of the function.

[g(x)=\int_1^x\sqrt{2+7t}\, dt](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?g(x)=\int_1%5ex\sqrt%7b2+7t%7d\,+dt)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\sqrt{2+7x}-1](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sqrt%7b2+7x%7d-1) |  |
|  | b. [\sqrt{2+7x}-3](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sqrt%7b2+7x%7d-3) |  |
|  | c. [\sqrt{2+7x}-2](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sqrt%7b2+7x%7d-2) |  |
|  | d. [\sqrt{2+7x}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sqrt%7b2+7x%7d) |  |

Question**3**

Marks: 1

Let [\int_1^3 f(x) dx=2, \, \int_1^2 f(x) dx=-5\,\, ](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_1%5e3+f(x)+dx=2,+\,+\int_1%5e2+f(x)+dx=-5\,\,+).   
  
Find [\int_2^3 f(x)dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int_2%5e3+f(x)dx).

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 7 |  |
|  | b. -3 |  |
|  | c. 3 |  |
|  | d. -7 |  |
|  | e. None of the other choices is correct |  |

Question**4**

Marks: 1

An animal population is increasing at a rate of 13+51t per year (where *t* is measured in years). By how much does the animal population increase between the fourth and tenth years?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 2,220 |  |
|  | b. 4,362 |  |
|  | c. 2,155 |  |
|  | d. 2,100 |  |
|  | e. 2,064 |  |

Question**5**

Marks: 1

Evaluate the indefinite integral

[\int\frac{4+6x}{\sqrt{6+4x+3x^2}}dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int\frac%7b4+6x%7d%7b\sqrt%7b6+4x+3x%5e2%7d%7ddx)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [2\sqrt{6+4x+3x^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2\sqrt%7b6+4x+3x%5e2%7d) |  |
|  | b. [(1/2)\sqrt{6+4x+3x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?(1/2)\sqrt%7b6+4x+3x%5e2%7d+C) |  |
|  | c. [\sqrt{6+4x+3x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sqrt%7b6+4x+3x%5e2%7d+C) |  |
|  | d. [2\sqrt{6+4x+3x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2\sqrt%7b6+4x+3x%5e2%7d+C) |  |

Question**6**

Marks: 1

Evaluate the indefinite integral.

[\int\frac{4+10x}{\sqrt{1+4x+5x^2}}dx](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\int\frac%7b4+10x%7d%7b\sqrt%7b1+4x+5x%5e2%7d%7ddx)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\sqrt{1+4x+5x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sqrt%7b1+4x+5x%5e2%7d+C) |  |
|  | b. [2\ln\sqrt{1+4x+5x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2\ln\sqrt%7b1+4x+5x%5e2%7d+C) |  |
|  | c. [2\sqrt{1+4x+5x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?2\sqrt%7b1+4x+5x%5e2%7d+C) |  |
|  | d. [\ln\sqrt{1+4x+5x^2}+C](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\ln\sqrt%7b1+4x+5x%5e2%7d+C) |  |