MAC2233 Practice 09

5.5 The Fundamental Theorem of Calculus 6.1 Areas between Curves 6.2 Applications

Evaluate the integral.

1) $\int_1^3 (2x^3 - 9x^{-2})\,dx$

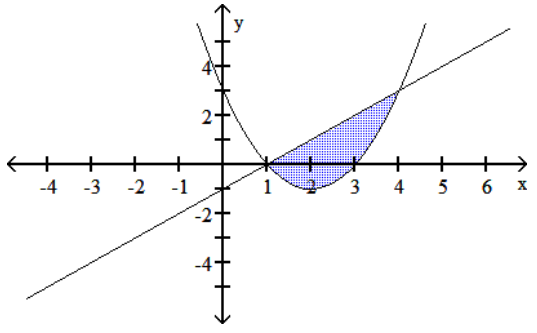
2) $\int_0^b 7e^x\,dx$

3) $\int_1^e \frac{5}{x}\,dx$

Find the area of the shaded region.

4) $y = x^2 - 4x + 3$

$y = x - 1$



Provide an appropriate response.

5) Find the area between the graph of $f(x) = 100 - 4x^2$ and the x-axis over the interval $[-5, 5]$. (Round answer to two decimal places.) 5) _____

A) 66.67 B) 33.33 C) 666.67 D) 333.33

Solve the problem.

6) The rate of flow of a continuous income stream (in thousands of dollars per day) is given by $f(t) = \frac{1}{t+1}$. Find the total income produced during the first ten days of operation. 6) _____

A) \$239.79 B) \$58,874.14 C) \$2843.18 D) \$2397.90

7) Find the total income produced by a continuous income stream in the first nine years if the rate of flow is $f(t) = 3300$. 7) _____

A) \$18,000 B) \$9900 C) \$27,000 D) \$29,700

1) 34
2) $7e^b - 7$
3) 5
4) $\frac{9}{2}$
5) C
6) D
7) D