

**King Fahd University of Petroleum and Minerals**

Department of Mathematical Sciences

MATH 102, Sections 4 and 8(042)

Quiz -1(a)

Time: 15 Minutes

Marks:...../9

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Name :

Serial #:

ID#:

Section #:

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(i) Find area  $A(x)$  between the graph of  $f(x) = x + 2$  over  $[-2, x]$  by a formula from geometry.

(ii) Evaluate  $\int \tan^3 5x \sec^2 5x dx$ .

(i)

(ii)

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(i) Find net signed area by the rectangle method between the graph of  $y = f(x) = x - 5$  and the interval  $[0, 10]$ .

(ii) Use derivative of  $f(t) = -\frac{t^{-2}}{2}$  to state the corresponding integral formula.

(i)

(ii)

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Quiz -1(c)

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(i) Use right end points in rectangle method to find the area under the curve  $y = x^3$  over the interval  $[2, 6]$ .

(ii) Evaluate  $\int \cos^2 x \, dx$ .

(i)

(ii)

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(i) For  $f(x) = \sqrt{1-x^2}$ ,  $x \in [0, 1]$ , use rectangle method to approximate  $A_n$  when  $n = 4$ .

(ii) Solve the initial -value problem:

$$f''(x) = 4x - 1, \quad f'(2) = -2 \text{ and } f(1) = 3.$$

(i)

(ii)