

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

DEPARTMENT OF MATHEMATICS & STATISTICS

MATH102 - Section 18 (Term 152)

Date: February 16, 2016

Quiz 2

Duration: 30 minutes

Family Name: _____ ID #: _____ Serial #: _____

1. Evaluate the following integrals:

(a) $\int \frac{e^{2x}}{1 + e^{4x}} dx$

(b) $\int_0^1 \frac{e^x + 1}{e^x + x} dx$

(4 + 4 = 8 points)

2. Find the area of the region bounded by the curves:

$$y = \sin x \quad \text{and} \quad y = \frac{1}{2}$$

from $x = 0$ to $x = \frac{\pi}{2}$.

(5 points)

3. Find the volume of the solid obtained by rotating the region bounded by:

$$y = x^3, \quad y = 1 \quad \text{and} \quad x = 0$$

about the line $x = 2$.

(7 points)

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DEPARTMENT OF MATHEMATICS & STATISTICS

MATH102 - Section 26 (Term 152)

Date: February 16, 2016

Quiz 2

Duration: 30 minutes

Family Name: _____ ID #: _____ Serial #: _____

1. Evaluate the following integrals:

(a) $\int \frac{10x + 15}{\sqrt{2x^2 + 6x + 1}} dx$

(b) $\int_1^4 \frac{e^{\sqrt{x}} \cos(e^{\sqrt{x}})}{\sqrt{x}} dx$

(4 + 4 = 8 points)

2. Find the area of the region bounded by the curves:

$$y^2 - x = 4 \quad \text{and} \quad y^2 + x = 2$$

(5 points)

4. Find the volume of the solid obtained by rotating the region bounded by:

$$y = x \quad \text{and} \quad y = \sqrt{x}$$

about the y - axis.

(7 points)