

CALCULUS II
QUIZ 2 A 3RD PARTIAL

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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. (12.5 pts each one)

Evaluate the integral.

1) $\int -9x \cos 5x \, dx$

A) $-\frac{9}{25} \cos 5x - \frac{9}{5}x \sin 5x + C$

C) $-\frac{9}{25} \cos 5x - \frac{9}{5} \sin 5x + C$

B) $-\frac{9}{25} \cos 5x - \frac{9}{5}x \sin 9x + C$

D) $-\frac{9}{5} \cos 5x - 9x \sin 5x + C$

1) A

2) $\int 23x \sin x \, dx$

A) $23 \sin x - 23 \cos x + C$

C) $23 \sin x - 23x \cos x + C$

B) $23 \sin x + 23x \cos x + C$

D) $23 \sin x - x \cos x + C$

2) C

3) $\int e^{5x} \cos 4x \, dx$

A) $\frac{e^{5x}}{2} [\sin 4x + \cos 4x] + C$

C) $\frac{e^{5x}}{41} [4 \sin 4x + 5 \cos 4x] + C$

B) $\frac{1}{41} [4 e^{5x} \sin 4x + 5 \cos 4x] + C$

D) $\frac{e^{5x}}{41} [4 \sin 4x - 5 \cos 4x] + C$

3) C

4) $\int x^3 \cos 3x \, dx$

A) $\frac{1}{3}x^3 \sin 3x - \frac{1}{3}x^2 \cos 3x + \frac{2}{9}x \sin 3x + \frac{2}{27} \cos 3x + C$

B) $\frac{1}{3}x^3 \sin 3x + 1x^2 \cos 3x - 2x \sin 3x - 2 \cos 3x + C$

C) $\frac{1}{3}x^3 \sin 3x + \frac{1}{3}x^2 \cos 3x - \frac{2}{9}x \sin 3x - \frac{2}{27} \cos 3x + C$

D) $\frac{1}{3}x^3 \cos 3x + \frac{1}{3}x^2 \sin 3x - \frac{2}{9}x \cos 3x - \frac{2}{27} \sin 3x + C$

4) C

5) $\int x^3 \ln 8x \, dx$

A) $\frac{1}{4}x^4 \ln 8x - \frac{1}{16}x^4 + C$

C) $\frac{1}{4}x^4 \ln 8x + \frac{1}{16}x^4 + C$

B) $\ln 8x - \frac{1}{4}x^4 + C$

D) $\frac{1}{4}x^4 \ln 8x - \frac{1}{20}x^5 + C$

5) A

$u = \ln 8x \quad dv = x^3 dx$
 $du = \frac{1}{x} \quad v = \frac{x^4}{4}$

$\frac{x^4 \ln 8x}{4} - \int \frac{x^4}{4x}$

$\frac{x^4 \ln 8x}{4} - \int \frac{x^3}{4} = \frac{x^4 \ln 8x}{4} - \frac{x^4}{16}$

$$v = \ln x \quad dv = \frac{1}{x} dx$$

$$du = \frac{1}{x} \quad v = 3x^2$$

$$3x^2 \ln x = \int \frac{3x^2}{x} = 3x^2 \ln x - \frac{3x^2}{2} + C$$

6) $\int_2^4 6x \ln x \, dx$

A) 40.2

B) 6.70

C) 55.2

D) 9.48

6) A

7) $\int (3x+2)e^{-4x} \, dx$

A) $-\frac{3}{4}xe^{-4x} - \frac{11}{16}e^{-4x} + C$

B) $-\frac{3}{4}xe^{-4x} - e^{-4x} + C$

C) $-12xe^{-4x} - 56e^{-4x} + C$

D) $\frac{3}{4}xe^{-4x} + \frac{11}{16}e^{-4x} + C$

7) A

8) $\int y^3 e^{-2y} \, dy$

A) $e^{-2y} \left[\frac{1}{2}y^3 - \frac{3}{4}y^2 + \frac{3}{4}y - \frac{3}{8} \right] + C$

B) $-e^{-2y} \left[\frac{1}{2}y^3 + \frac{3}{4}y^2 + \frac{3}{4}y + \frac{3}{8} \right] + C$

C) $-\frac{1}{8}y^4 e^{-2y} + C$

D) $-\frac{1}{2}e^{-2y} [y^3 + y^2 + y + 6] + C$

8) B