Integral Calculus (MATH-106)

HW-I _____ Spring 2019

Deadline: April 3 by 11:59 A.M. **Maximum Points:** 25

Question 1 If $\int_0^x g(w)\,dw = \frac{x}{x+1}$ and g is continuous on $[0,\infty)$, find $g(\sqrt{2})$.

3 Marks

Question 2 Find the value of c in the mean value theorem for $f(x) = \sqrt{x+2}$ for $x \in [-1, 8]$.

3 Marks

Question 3 If $y = (\cos x)^{x^2}\, e^x$, find y'.

3 Marks

Question 4 Evaluate the $\int 2^{5^x}\, 5^x\, dx$.

3 Marks

Question 5 Find the value of constant α so that $\sum_{5}^{15} \left(k^2 - \alpha k\right) = 100$.

2 Marks

Question 6 Find $\int \frac{\sqrt{x}\,dx}{\sqrt{1+4x^3}}$.

3 Marks

Question 7 Evaluate $\int \frac{dx}{x\sqrt{x^7-9}}$.

3 Marks

Question 8 Evaluate $\int \frac{dx}{x\sqrt{16-e^{-6x}}}$.

3 Marks

Question 9 Evaluate the integral $\int x^2 \sqrt{7-6x^3}\,dx$

2 Marks

—- Good Luck —-

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Deadline: April 3 by 11:59 A.M. **Maximum Points:** 25

Question 1 Find the value of c in the mean value theorem for $f(x) = \sqrt{x+2}+1$ for $x \in [-1, 8]$.

3 Marks

Question 2 If $\int_0^x g(w)\,dw = \frac{x}{2x+1}$ and g is continuous on $[0, \infty)$, find $g(\sqrt{2})$.

3 Marks

Question 3 If $y = (\sin x)^{x^3}\, e^x$, find y'.

3 Marks

Question 4 Evaluate the $\int 2^{5^x}\, 5^x\, dx$.

3 Marks

Question 5 Find the value of constant α so that $\sum_{5}^{15} \left(\alpha k^2 - k\right) = 100$.

2 Marks

Question 6 Evaluate $\int \frac{dx}{x\sqrt{9-e^{-3x}}}$.

3 Marks

Question 7 Evaluate $\int \frac{dx}{x\sqrt{x^5-9}}$.

3 Marks

Question 8 Find $\int \frac{\sqrt{x}\,dx}{\sqrt{3+x^3}}$.

3 Marks

Question 9 Evaluate the integral $\int (3 - s^3)^2\, s\, ds$

2 Marks

—- Good Luck —-

Integral Calculus (MATH-106)

HW-I _____ Spring 2019

Deadline: April 3 by 11:59 A.M. **Maximum Points:** 25

Question 1 If $y = (\sin 2x)^{x^2}\, e^x$, find y'.

3 Marks

Question 2 Find the value of c in the mean value theorem for $f(x) = \sqrt{x+2} + x$ for $x \in [-1, 8]$.

3 Marks

Question 3 If $\int_0^x g(w)\, dw = \frac{x}{2x+3}$ and g is continuous on $[0, \infty)$, find $g(\sqrt{2})$.

3 Marks

Question 4 Evaluate the $\int 5^{2^x}\, 2^x\, dx$.

3 Marks

Question 5 Find the value of constant α so that $\sum_{5}^{15} \left(\alpha k^2 - k\right) = 200$.

2 Marks

Question 6 Find $\int \frac{\sqrt{2x}\, dx}{\sqrt{3+x^3}}$.

3 Marks

Question 7 Evaluate $\int \frac{dx}{x\sqrt{4-e^{-3x}}}$.

3 Marks

Question 8 Evaluate $\int \frac{dx}{x\sqrt{x^3-9}}$.

3 Marks

Question 9 Evaluate the integral $\int (3-s)^2\, s^2\, ds$

2 Marks

—- Good Luck —-

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Question 1 Evaluate the $\int 2^{5^{2x}}\, 5^{2x}\, dx$.

3 Marks

Question 2 Find the value of c in the mean value theorem for $f(x) = \sqrt{x+2} - \sqrt{3}$ for $x \in [-1, 8]$.

3 Marks

Question 3 If $y = (\sin x)^{x^3}\, e^{2x}$, find y'.

3 Marks

Question 4 If $\int_0^x g(w)\, dw = \frac{-x}{2x+1}$ and g is continuous on $[0, \infty)$, find $g(\sqrt{2})$.

3 Marks

Question 5 Find the value of constant α so that $\sum_{5}^{15} \left(\alpha k^2 - \frac{k}{2}\right) = 100$.

2 Marks

Question 6 Evaluate $\int \frac{dx}{x\sqrt{2-e^{-3x}}}$.

3 Marks

Question 7 Evaluate $\int \frac{dx}{x\sqrt{x^5-7}}$.

3 Marks

Question 8 Find $\int \frac{\sqrt{x}\, dx}{\sqrt{2+x^3}}$.

3 Marks

Question 9 Evaluate the integral $\int (3-s)^2\, s^2\, ds$

2 Marks

—- Good Luck —-