Math 151 8/30/7 Clicker Quiz

1. $f(x)=\cos(e^{x^2})$. Find $f'(x)$.

A. $x^2e^{x^2}\sin(e^{x^2})$

B. $2xe^{x^2}\sin(e^{x^2})$

C. $e^{x^2}\sin(e^{x^2})$

D. $-x^2e^{x^2}\sin(e^{x^2})$

E. $-2xe^{x^2}\sin(e^{x^2})$

F. $-e^{x^2}\sin(e^{x^2})$

G. $f'(x)$ doesn't exist.

H. None of the above.

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Math 151 8/30/7 Clicker Quiz

2. How many hours per week would a typical Math 151 student need to spend working exercises to get an A in the course?

A. None; homework is not collected.
B. 1-2
C. 3-4
D. 5-6
E. 7 or more
F. No amount of homework is enough for an A.

SAN DIEGO STATE UNIVERSITY

Math 151 9/4/7 Clicker Quiz
Question 1

Find $\int \frac{dx}{\sqrt{9x^2+1}}$.

A. $\sinh^{-1}(x) + c$

B. $\sinh^{-1}(3x) + c$

C. $\sinh^{-1}(9x) + c$

D. $\frac{1}{3}\sinh^{-1}(3x) + c$

E. $\frac{1}{9}\sinh^{-1}(9x) + c$

F. None of the above.

SAN DIEGO STATE UNIVERSITY

Math 151 9/4/7 Clicker Quiz
Question 2

If $\sinh x = 7/24$, find $\tanh x$, if possible.

A. $7/24$
B. $7/25$
C. $24/25$
D. $25/7$
E. $24/7$
F. $25/24$
G. Impossible to find $\tanh x$ with this information.
H. None of the above.

Math 151 9/4/7 Clicker Quiz
Question 3

Which of the following limits can be found by correctly using L'Hôpital's rule?

I: $\lim_{x\to\infty} x^x$ II: $\lim_{x\to\infty} \frac{\sin x}{x}$ III: $\lim_{x\to 1} x \ln x$

A. None
B. I only
C. II only
D. III only
E. I and II, but not III
F. I and III, but not II
G. II and III, but not I
H. I, II, and III

SAN DIEGO STATE UNIVERSITY

Math 151 9/6/7 Clicker Quiz
Question 1

Find $\lim_{x \to 1+} \frac{(1/2)\ln x + 3\sqrt{x} - 3}{x - 1}$.

A. 0
B. 1/2
C. 1
D. 2
E. 3
F. 4
G. $+\infty$
H. None of the above.

San Diego State University

Math 151 9/6/7 Clicker Quiz
Question 2

Find $\lim_{x \to 0+} (1 + \sin 3x)^{\cot 2x}$.

A. 0
B. 1
C. $2/3$
D. 2
E. $3/2$
F. 3
G. $+\infty$
H. None of the above.

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Math 151 9/6/7 Clicker Quiz
Question 3

If $\cosh x = 5/3$, find $\coth x$, if possible.

A. $3/4$
B. $3/5$
C. $4/5$
D. $5/4$
E. $4/3$
F. $5/3$
G. Impossible to find $\tanh x$ with this information.
H. None of the above.

San Diego State University

Math 151 9/11/7 Clicker Quiz
Question 1

Find $\int \sqrt{x} \ln x dx$.

A. $2/3\, x^{3/2} \ln x - 1/3\, x^{-1/2} + c$

B. $2/3\, x^{3/2} \ln x - 4/9\, x^{3/2} + c$

C. $2/3\, x^{3/2} \ln x - 4/15\, x^{5/2} + c$

D. $1/2\, x^{-1/2} \ln x + x^{-1/2} + c$

E. $1/2\, x^{-1/2} \ln x - 3/4\, x^{-5/2} + c$

F. $1/2\, x^{-1/2} \ln x - x^{1/2} + c$

G. Cannot be determined.

H. None of the above.

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Math 151 9/11/7 Clicker Quiz
Question 2

Find $\int \tan^{-1}(1/x)\,dx$.

A. $x\tan^{-1}(1/x) + 1/2\ln(x^2+1) + c$

B. $x\tan^{-1}(1/x) - 1/2\ln(x^2+1) + c$

C. $x\tan^{-1}(1/x) + \tan^{-1} x + c$

D. $x\tan^{-1}(1/x) - \tan^{-1} x + c$

E. $\tan^{-1}(1/x) + \tan^{-1} x + c$

F. None of the above.

SAN DIEGO STATE UNIVERSITY

Math 151 9/11/7 Clicker Quiz
Question 3

Find $\lim_{x \to 0+} (\sin 4x + \cos 3x)^{\cot 2x}$.

A. 0
B. 1
C. 2
D. $e^{1/2}$
E. e
F. e^2
G. $+\infty$
H. None of the above.

Math 151 9/13/7 Clicker Quiz
Question 1

Find $\int \sin^3 x \cos^4 x \, dx$.

A. $1/7\, x^7 - 1/5\, x^5 + c$

B. $1/7\, x^7 + 1/5\, x^5 + c$

C. $1/7\, \cos^7 x - 1/5\, \cos^5 x + c$

D. $1/7\, \cos^7 x + 1/5\, \cos^5 x + c$

E. $1/7\, \sin^7 x - 1/5\, \sin^5 x + c$

F. $1/7\, \sin^7 x + 1/5\, \sin^5 x + c$

G. $1/8\, \cos^8 x + c$

H. None of the above.

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Math 151 9/13/7 Clicker Quiz
Question 2

Find $\int \sqrt{9 - x^2}\, dx$.

A. $1/2(9 - x^2)^{-1/2} + c$

B. $-x(9 - x^2)^{-1/2} + c$

C. $2/3(9 - x^2)^{3/2} + c$

D. $9/2 \sin^{-1}(x/3) - 1/2 \sin(2 \sin^{-1}(x/3)) + c$

E. $9/2 \sin^{-1}(x/3) + 1/2 \sin(2 \sin^{-1}(x/3)) + c$

F. $9/2 \sin^{-1}(x/3) - 9/4 \sin(2 \sin^{-1}(x/3)) + c$

G $9/2 \sin^{-1}(x/3) + 9/4 \sin(2 \sin^{-1}(x/3)) + c$

H. None of the above.

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Math 151 9/18/7 Clicker Quiz
Question 1

Simplify $\frac{1}{(x^2+1)(x^2-1)(x-1)}$ with partial fractions.

A. $\frac{A}{x^2+1} + \frac{B}{x^2-1} + \frac{C}{x-1}$

B. $\frac{Ax+B}{x^2+1} + \frac{C}{x^2-1} + \frac{D}{x-1}$

C. $\frac{A}{x^2+1} + \frac{B}{x+1} + \frac{C}{x-1} + \frac{D}{x-1}$

D. $\frac{Ax+B}{x^2+1} + \frac{C}{x+1} + \frac{D}{x-1} + \frac{E}{x-1}$

E. $\frac{A}{x^2+1} + \frac{B}{x+1} + \frac{C}{x-1} + \frac{D}{(x-1)^2}$

F. $\frac{Ax+B}{x^2+1} + \frac{C}{x+1} + \frac{D}{x-1} + \frac{E}{(x-1)^2}$

G. More than one of the above are correct.

H. None of the above.

SAN DIEGO STATE UNIVERSITY

Math 151 9/18/7 Clicker Quiz
Question 2

Find A, if $\frac{x^2+1}{(x-1)^2(2x-1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{C}{2x-1}$.

A. $A \leq -3$

B. $A = -2$

C. $A = -1$

D. $A = 0$

E. $A = 1$

F. $A = 2$

G. $A \geq 3$

H. None of the above.

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Math 151 9/18/7 Clicker Quiz
Question 3

Evaluate $\int \frac{\sqrt{x^2-9}}{x^3}dx$.

A. $1/6\sec^{-1}(x/3) - 1/12\sin(2\sec^{-1}(x/3)) + c$

B. $1/6\sec^{-1}(x/3) + 1/12\sin(2\sec^{-1}(x/3)) + c$

C. $1/6\sec^{-1}(x/3) - 1/6\sin(2\sec^{-1}(x/3)) + c$

D. $1/6\sec^{-1}(x/3) + 1/6\sin(2\sec^{-1}(x/3)) + c$

E. $1/2\sec^{-1}(x/3) - 1/4\sin(2\sec^{-1}(x/3)) + c$

F. $1/2\sec^{-1}(x/3) + 1/4\sin(2\sec^{-1}(x/3)) + c$

G. $1/2\sec^{-1}(x/3) - 1/2\sin(2\sec^{-1}(x/3)) + c$

H. $1/2\sec^{-1}(x/3) + 1/2\sin(2\sec^{-1}(x/3)) + c$

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Math 151 9/20/7 Clicker Quiz
Question 1

In the integral table in the back of your book, which formula would you use to integrate:

$$\int \frac{\sqrt{11 - 10x^2}}{9x^2} dx$$

Enter the number of the formula you would use.

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Math 151 9/20/7 Clicker Quiz
Question 2

In the integral table in the back of your book, which formula would you use to integrate:

$$\int \sqrt{1 - e^x}\, e^{2x}\, dx$$

Enter the number of the formula you would use.

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Math 151 9/20/7 Clicker Quiz
Question 3

In the integral table in the back of your book, which formula would you use to integrate:

$$\int \sqrt{x^{2/3} - 7}\,dx$$

Enter the number of the formula you would use.

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Math 151 9/20/7 Clicker Quiz
Question 4

In the integral table in the back of your book, which formula would you use to integrate:

$$\int \frac{dx}{e^x \sqrt{e^{2x} - 3}}$$

Enter the number of the formula you would use.

SAN DIEGO STATE UNIVERSITY

Math 151 9/25/7 Clicker Quiz
Question 1

Estimate $\int_0^4 f(x)dx$, using the trapezoidal method with $n = 4$, given that $f(0) = 1, f(1) = 2, f(2) = 3, f(3) = 4, f(4) = 2, f(5) = 1$.

A. 9
B. 10
C. 10.5
D. 11
E. 12
F. 15
G. 16.5
H. None of the above, or impossible.

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Math 151 9/25/7 Clicker Quiz
Question 2

Estimate $\int_0^4 f(x)dx$, using Simpson's method with $n = 2$, given that $f(0) = 1, f(1) = 2, f(2) = 3, f(3) = 4, f(4) = 2, f(5) = 1$.

A. 9
B. 10
C. 10.5
D. 11
E. 12
F. 15
G. 16.5
H. None of the above, or impossible.

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Math 151 9/25/7 Clicker Quiz
Question 3

In solving a partial fractions problem, you find:

$$A(x^2+1)+(Bx+C)(x-1)=x+3$$

Find B. Enter a numeric answer on your keypad. If necessary, use the $+-$ key to enter a negative number, and the *sym* key to enter a decimal point.

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Math 151 9/27/7 Clicker Quiz
Question 1

Which of the following improper integrals are convergent:

$$\text{I: } \int_0^1 \frac{dx}{x^2} \qquad \text{II: } \int_1^\infty \frac{dx}{x^2} \qquad \text{III: } \int_0^\infty \frac{dx}{x^2}$$

A. none
B. I only
C. II only
D. III only
E. I and II, but not III
F. I and III, but not II
G. II and III, but not I
H. all are convergent

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Math 151 9/27/7 Clicker Quiz
Question 2

Which of the following improper integrals are convergent:

$$\text{I: } \int_0^1 \frac{dx}{\sqrt{x}} \qquad \text{II: } \int_1^\infty \frac{dx}{\sqrt{x}} \qquad \text{III: } \int_0^\infty \frac{dx}{\sqrt{x}}$$

A. none
B. I only
C. II only
D. III only
E. I and II, but not III
F. I and III, but not II
G. II and III, but not I
H. all are convergent

SAN DIEGO STATE UNIVERSITY

Math 151 9/27/7 Clicker Quiz
Question 3

Which of the following improper integrals are convergent:

$$\text{I: } \int_0^1 \frac{dx}{x} \qquad \text{II: } \int_1^\infty \frac{dx}{x} \qquad \text{III: } \int_0^\infty \frac{dx}{x}$$

A. none
B. I only
C. II only
D. III only
E. I and II, but not III
F. I and III, but not II
G. II and III, but not I
H. all are convergent

SAN DIEGO STATE UNIVERSITY

Math 151 10/2/7 Clicker Quiz
Question 1

Consider the region enclosed by $y \geq x^2$ and $y \leq x/2 + 3$. To find its area, we can either integrate dx or dy. How many integrals do we get, of each type?

A. $dx : 1, dy : 1$
B. $dx : 2, dy : 1$
C. $dx : 1, dy : 2$
D. $dx : 2, dy : 2$
E. $dx : 1, dy : 3$
F. $dx : 3, dy : 1$
G. $dx : 2, dy : 2$
H. None of the above

SAN DIEGO STATE UNIVERSITY

Math 151 10/2/7 Clicker Quiz
Question 2

Consider the region enclosed by $y \geq x^2$, $y \leq x/2 + 3$, and $x \leq 3/2$. To find its area, we can either integrate dx or dy. How many integrals do we get, of each type?

A. $dx : 1, dy : 1$
B. $dx : 2, dy : 1$
C. $dx : 1, dy : 2$
D. $dx : 2, dy : 2$
E. $dx : 1, dy : 3$
F. $dx : 3, dy : 1$
G. $dx : 2, dy : 2$
H. None of the above

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Math 151 10/2/7 Clicker Quiz
Question 3

Consider the region enclosed by $y \geq x^2$, $y \leq x/2 + 3$, and $y \leq -2x + 3$. To find its area, we can either integrate dx or dy. How many integrals do we get, of each type?

A. $dx : 1, dy : 1$
B. $dx : 2, dy : 1$
C. $dx : 1, dy : 2$
D. $dx : 2, dy : 2$
E. $dx : 1, dy : 3$
F. $dx : 3, dy : 1$
G. $dx : 2, dy : 2$
H. None of the above

SAN DIEGO STATE UNIVERSITY

Math 151 10/4/7 Clicker Quiz
Question 1

Consider the region enclosed by $y = 2x^2$ and $y = x$. Rotate this region about the line $y = 0$. Find the volume of the resulting object.

Enter a numeric answer on your keypad, using the *sym* key to enter a decimal point. If necessary, round to four decimal places.

SAN DIEGO STATE UNIVERSITY

Math 151 10/4/7 Clicker Quiz
Question 2

Consider the region enclosed by $y = 2x^2$ and $y = x$. Rotate this region about the line $x = 0$. Find the volume of the resulting object.

Enter a numeric answer on your keypad, using the *sym* key to enter a decimal point. If necessary, round to four decimal places.

SAN DIEGO STATE UNIVERSITY

Math 151 10/9/7 Clicker Quiz
Question 1

Consider the region enclosed by $y = e^{x^2}$, the axes, and $x = 1$. Rotate this region about the line $x = 0$. Find the volume of the resulting object.

Enter a numeric answer on your keypad, using the *sym* key to enter a decimal point. If necessary, round to four decimal places.

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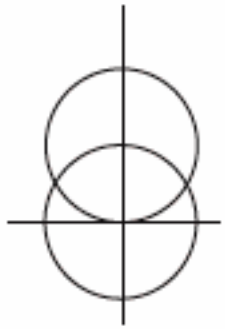
Math 151 10/9/7 Clicker Quiz
Question 2

Two spheres of radius 1 have distance 1 between their centers. Find the volume of their intersection.



Enter a numeric answer on your keypad, using the *sym* key to enter a decimal point. If necessary, round to four decimal places.

SAN DIEGO STATE UNIVERSITY

Math 151 10/11/7 Clicker Quiz
Question 1

Find the length of the curve $y = x^2$ between $(0, 0)$ and $(2, 4)$.

Enter a numeric answer on your keypad, using the *sym* key to enter a decimal point. If necessary, round to four decimal places.

SAN DIEGO STATE UNIVERSITY

Math 151 10/11/7 Clicker Quiz
Question 2

Find the length of the curve $y = \cosh x$ between $(0, 1)$ and $(1, (e + e^{-1})/2)$.

Enter a numeric answer on your keypad, using the *sym* key to enter a decimal point. If necessary, round to four decimal places.

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Math 151 Fall 2007 Clicker Quiz Answers

Date	Question	Answer
8/30	1	E
	2	E
9/4	1	D
	2	B
	3	A
9/6	1	D
	2	H
	3	D
9/11	1	B
	2	A
	3	F
9/13	1	C
	2	G
9/18	1	F
	2	B
	3	A
9/20	1	33
	2	54 or 60
	3	40
	4	45
9/25	1	C[1]
	2	B
	3	-2
9/27	1	C
	2	B
	3	A
10/2	1	C
	2	C
	3	H
10/4	1	0.05236
	2	0.06545
10/9	1	5.39814
	2	1.309
10/11	1	4.64678[1]
	2	1.1752

[1] This quiz was not graded due to technical malfunction.