WeBWorK assignment three is due Thursday, February 1 at 9:00pm.

If you need help with the theory as you work through your assignment, your scheduled lab and the continuous tutorial (MS 365) are the best places to go.

It's a good idea to start working on your assignment early! Good Luck!!

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1. (1 pt) The indefinite integral $\int (4x+3)e^{2x}dx$ can be evaluated using integration by parts.
If we let $u = 4x+3$, and $dv = e^{2x}dx$, we find that du=__________dx and v=__________.
The formula $\int udv = uv - \int vdu$ then tells us that:
$\int (4x+3)e^{2x}dx$ = __________ - $\int$__________dx.
Thus $\int (4x+3)e^{2x}dx$ = ____________________$+C$

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2. (1 pt) Use integration by parts to evaluate the integral. (Hint: let $u = x$ and $v' = e^{4x}$)

$$\int xe^{4x}dx$$

______________________________ $+C$

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3. (1 pt) Use integration by parts to evaluate the integral.

$$\int 3x\cos(3x)dx$$

______________________________ $+C$

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4. (1 pt) Evaluate the indefinite integral.

$$\int e^{4x}\sin(6x)dx$$

_________________________ +C

Hint: This is similar to Example 4 of Section 6.1 in the book.

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5. (1 pt) Evaluate the definite integral.

$$\int_1^4 t^4\ln(3t)dt$$

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6. (1 pt) First make a substitution and then use integration by parts to evaluate the integral.

$$\int x^9\cos(x^5)dx$$

______________________________ $+C$

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7. (1 pt) Use integration by parts to evaluate the integral.

$$\int 27x^2\cos(3x)dx$$

______________________________ $+C$

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8. (1 pt) Evaluate the definite integral.

$$\int_0^5 \sin^2(7x)\cos^2(7x)\,dx$$

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HINT: you will need to use some trig identities. The double angle formulas for sine and cosine: $sin(2t) = 2sin(t)cos(t)$ and $cos(2t) = 1-2(sin(t))^2$ or $cos(2t) = 2(cos(t))^2 - 1$ will be very useful. For example, $sin(7x)cos(7x) = (1/2)sin(14x)$.
A simple substitution won't work!

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9. (1 pt) Evaluate the definite integral.

$$\int_0^{\pi/2} \sin^5 x\cos^{10} x\,dx$$

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10. (1 pt) Evaluate the definite integral.

$$\int_0^{\frac{\pi}{39}} \frac{\sec^{12}(13x)}{\cot(13x)}dx$$

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