Name _____Quiz 1

Please clearly show all your work on the following problems.

1) Find the integral below.

$$\int x\cos(3x)\,dx = \frac{x\sin(3x)}{3} - \int \frac{\sin(3x)}{3}dx = \frac{x\sin(3x)}{3} + \frac{\cos(3x)}{9} + C$$

$u = x$ $\quad dv = \cos(3x)\,dx$

$du = dx$ $\quad v = \frac{\sin(3x)}{3}$

2) Find the integral below.

$$\int \sinh(x)\,e^{x}dx$$

This problem didn't work out as intended, so full credit was given for any attempt that started out correctly.

What I intended was a double-integration-by-parts where you solve for the original answer. What actually happened was that the answer cancelled out and this technique doesn't work.
(What would work is using a hyperbolic trig formula to turn $\sinh(x)$ into exponentials, but this course isn't going that direction)