Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Warm Up

The following is to be done individually. Perform the indicated operation (show all work) and put back in the folder when you are done. Do the best you can; this is not for a grade.

1.

2. *(to the reader - this one was a distracter - this one was also a major focus of my last CATS - Rules of Fractions and Exponents are Student’s Nemesis in Calculus! - I am still trying to “fix this.”*

3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Common Mistakes on WU

16/28 students had something different between #1 and #3.

Answer should be:

The following are the sample errors made of the 16 students.

:

|  |  |  |
| --- | --- | --- |
| Student | #1 Information | #3 Information |
| Person 1 | Good | Thought the 4 and 2 in front of the were supposed to be integrated (rewrote as addition and integrated them). These should have just been coefficients in front (do nothing with them but multiply to final answer).  |
| Person 2 | 3rd term disappeared and did not integrate. Tried to use u-sub in 2nd term.  | Had random numbers in the answer. Tried u-sub, and changed addition parts to multiplication. (this was all over the place) |
| Person 3 | Rewrote cos(t) and sin(t) as tangent (can’t do unless these are being divided).  | Kept cos(t) and sin(t) separate as they should have, but derived the rest (instead of integrate).  |
| Person 4 | Correct | No idea. There are random numbers throughout the problem such as 1/840 and 1/20. (see below) |

Person 4 answer:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sample Warm Ups

My colleagues and I will be working on new questions to further dive into this to try to understand more about misconceptions students have with basic integrals. Please note that bringing more complication integrals, such as u-sub adds another layer of complexity. We are trying to get at the heart of the matter, so keep it simple for now.

1. John and Daniela are arguing over the following problem.

John says you can integrate the problem by doing the following:

 =

Daniela says you cannot integrate each equation individually since they are being multiplied together. So, a sub must occur.

Are either of them correct? Why? What errors, if any, occurred?

2. Find the error in the following problem.

 Step 1:

 Step 2:

3. Compare the following integrals. Are they the same or different? Please explain your rationale.

 A. =

 B. In the left equation, what is the operation of the 4 to the ln(x)?

 C. In the right equation, what is the operation between the 4 and the integral?