IB Math SL Notes **Integration of Composites**

Topic 6, Part II – Day 2

1. **Composite Functions**

In this section, we will discuss problems of the form f(ax + b) where f(x) is one of the “mother functions:” xn, ex, sin x, or cos x.

Integration Rules:

|  |
| --- |
|  |
|  |
|  |
|  |
|  |

Summarize the above table in one sentence that describes how to find the integral for f(ax + b) where f(x) is one of the “mother functions:” xn, ex, sin x, or cos x.

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

**Examples:**

Find the following:

1.  2.

3.  4. 

5.  6. 

1. **Substitution**

The method of “u substitution” is used when presented with an integral that is in the form

. In otherwords, this is a more hardcore version of the chain-rule in reverse.

Ex: 

“You better recognize” that this is the dblob part.

Process: 

Substitute: 

Integrate:

Then “re-substitute” the original expression:

**More Examples:**

Find the following:

7.  8. 

9. 10. 

IB Math SL Homework Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Topic 7, Part II – Day 2

Find each of the following:

1.  2.  3. 

4.  5.  6. 

7.  8.  9. 

10.  11.  12. 

13.  14.  15. 

16. 