**TRIGONOMETRIC INTEGRATION AND TIPS**

**TIPS FOR SIN AND COS**

1.

If n = odd and m = even,

We can say that

From this point on, we can then decide to do the u-substitution with

2. A similar method can be applied if m is odd and n is even

For that, we are going to end up with something like:

3. When m and n are even (m=n=even)

We will use the half-angle formula

4. If both are odd

5.

**QUESTIONS**

1. Answer:

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

**TIPS FOR SEC AND TAN**

1. If both are even and bring out

2. If both are odd and bring out

1.

**TRIGONOMETRIC SUBSTITUTION**

Recall

if

Given an example, ,

1. When you have a question containing , z =

2. When you have a question containing 1 over ,

3. When you have a question containing ,

4. When you have a question containing root ,

5. When you have a question containing ,

**REDUCTION FORMULAE**

Note the recursion formulae of the following

1. The reduction formula for sine . To prove the reduction formula of sin,

The you solve by parts

2. The reduction formula for cosine

3. The reduction formula for secant

It should be noted that the reduction formula for secant doesn’t work if n=1

4. The reduction formula for tangent

**Questions**

1. Answer:

2. Find the integral of cot (x)

3. Find the integral:

Solutions

1.

Let

2.

Let

3. Typically, you will want to bring out a . This is because of the identity

Next we use the substitution method.

For the first 2, let

Recall that

After solving sha, you should have an answer:

7.

**WEIERSTRASS SUBSTITUTION**

This is also called the **t-sub** method

QUESTIONS

1.