

Section 7.4: Trigonometric Substitution

MATH 131: Calculus II, Section 2

Name (Print): _____

Due: Monday, October 22, 2018 at the beginning of class

After reading Section 7.4 (pages 531-537 in the text), respond to the following questions **on this handout**. Be sure to staple your pages together before turning it in if they are not double sided. **You must answer all parts to all questions to earn full credit!!! Also, use FULL SENTENCES to answer questions that require words.** See the salmon homework guidelines handout for details. You are encouraged to take additional notes wherever you are keeping your class notes.

Response Section

1. (a) For what kinds of integrals is trigonometric substitution particularly useful? Look through the examples and see what is common in all or almost all of the examples.

(b) Why might you choose to use trigonometric substitution? That is, with what does trigonometric substitution help?

2. Copy Table 7.4. Instead of writing the “Useful identity” column the way they have it, you can write it with $a = 1$. The other columns should keep the a ’s however.

3. In first semester calculus we had situations where we needed to figure out how to express one trigonometric function in terms of x by using another trigonometric function and a right triangle. We will need to do this a lot with trigonometric substitution. If $x = 7 \tan \theta$, express $\sin \theta$ in terms of x . Be sure to include a diagram. (There are several examples of this in the text: check out Figure 7.4 and Figure 7.8.)

Questions/Overview Section

4. Write down any **questions** you have on the reading. Be as specific as possible! See the salmon homework guidelines handout for details.

Reflection Section

5. Write **two or three** sentences reflecting on the process of your work so far in the course. See the salmon homework guidelines handout for details.

Time Section

6. How much time did you spend on this reading assignment? _____