**Chapter 8 Review**

1. **Basic Trig integrals**: watch for the forms . Modify the numerator to fit the form, split fractions and complete squares when appropriate.
2. **u-substitution**: observe that both *u* and *u’* occur in the integrand. Make sure everything is written in terms of new variable *u*.
3. **Integration by Parts**: is used when we see product of trig, polynomial, exponential functions, and especially inverse trig and logarithmic functions.
4. **Trig integrals**: use trig identities and/or u-subs
5. **Trig substitution**: can be used when we see the forms of or in general. Common choices are
6. **Partial Fractions decomposition**: make sure degree of numerator is smaller than the degree of the denominator before we use partial fraction technique.
7. **Integration by Table**: Take-home part
8. **Improper Integrals**: is improper if f(x) is discontinuous (undefined) at some point c on the interval [a, b], or one of the limits (a or b) is infinity.

**Problems**

1. 2. 3.

 4. 5. 6.

 7. 8. 9.

 10. 11. 12.

 13. 14. 15.

 16. 17. 18.

 19. 20. 21.

 22. 23. 24.

 25. 26. 27.

28.

**Answers**

1. + C
2. 0
3.
4. Diverges
5. 2