Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Improper Integrals – Worksheet 1**

(1)

(2)

**Major Note:** Improper integrals are treated as limits.

**Example 1a:** An *amazing* example with a finite amount of area in an infinite region!

Comment: The above example means that sometimes with a FINITE amount of paint you can (theoretically) paint an infinitely long region (albeit this region gets “real small near infinity”).

**Example 1b:** A non-amazing example.

Comment: The above example is an infinite region that would take an infinite amount of paint to paint.

Notice that we obtain the wrong answer if we do not realize this is improper!!!

 (Remember - symmetry helps make things easier!!)