

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

## MA111 — Quiz #3 Solutions

Friday, September 18

1. What is the formula for the number of edges in  $K_N$ ?

$K_N$  has  $\frac{N(N-1)}{2}$  edges.

2. Explain where this formula comes from — how to derive it.

There are  $N - 1$  edges touching each of the  $N$  vertices, for a total of  $N(N - 1)$  edges. But each edge is being counted twice—once from each endpoint. So you must divide by 2 to get the correct number of edges.