MATH 205 B01, B03

Winter 2005

Quiz 1 30 Minutes

NAME: _____ **ID**: _____

1. Factor $x^3 + 1$. [20]

2. For each of the following answer True or False. Write "True" or "False", do not use "T,F". In this question a, b, c all denote integers. [20]
   (a) $a \cdot (b + c) = a \cdot b + a \cdot c$. _____
   (b) $(a^3 + b^3)^{1/3} = a + b$. _____
   (c) $a + (b \cdot c) = (a + b) \cdot (a + c)$. _____
   (d) $(a^3)^5 = a^{15}$. _____
   (e) For $a, b, c > 0$, $\frac{a}{b+c} = \frac{a}{b} + \frac{a}{c}$. _____

3. Factor $42,471$ into a product of primes. [20]

4. Find, using the Euclidean algorithm, the GCD of $231, 322$. [20]

5. Determine whether the graph drawn below admits an Euler path or Euler circuit. If it does indicate the path (circuit) by the sequence of vertices (e.g. $XDYCDG...$). [20]