uous on their domains. Also $f(0-\frac{1}{n}) = f(-\frac{1}{n})$
$= (-\frac{1}{n^3}) \to 0$ as $n \to \infty$, and $f(0) = \sin(2\times 0) = 0$, hence $f(x_n) \to f(0)$ where $x_n \to 0$, and the function is continuous at 0. Need Glue Rule here.

On $]\pi, \infty[$, $f(x) = e^{-x}$, an exponential function which is differentiable, hence continuous on $]\pi,\infty[$. We have already shown that $f(x)$ is discontinuous at π, and just shown that $f(x)$ is continuous at any other point of $\mathbb{R}$ hence $f(x)$ is continuous on $\mathbb{R} - \{\pi\}$.

7/10 Need Local Rule for $]0,\pi[$ and $]\pi,\infty[$ also

5) $G = \{1,5,7,11,13,17,19,23\}$.

a) G ~~has~~ must have subgroups of possible order 1, 2, 4, 8 (these numbers are whole divisors of the order of G).

A subgroup of order 1 is ~~the~~ identity element e, ie $\{1\}$; $\{1\}$

The Group G has Cayley table

$\times_{24}$	1	5	7	11	13	17	19	23
1	1	5	7	11	13	17	19	23
5	5	1	11	7	17	13	23	19
7	7	11	1	5	19	23	13	17
11	11	7	5	1	23	19	17	13
13	13	17	19	23	1	5	7	11
17	17	13	23	19	5	1	11	7
19	19	23	13	17	7	11	1	5
23	23	19	17	13	11	7	5	1

From the Cayley table, every element is self inverse, so a subgroup of order 2 could consist of the identity, 1, and any other element eg $\{1,5\}$. The identity is a member of this set and each element of the set is ~~self~~ inverse; so has an inverse which is