Theorem

g continuous at a
f continuous at $f(a)$ $\Rightarrow$ $f \circ g$ cont. at a

$\lim_{x \to a} \sqrt[n]{x} = \sqrt[n]{a}$ if $n \in \mathbb{Z}$ and n even $\Rightarrow a > 0$

Ex II

$f(x) = x^3 - x - 2 = 0$
$f(1) = 1 - 1 - 2 = -2$
$f(2) = 8 - 2 - 2 = 4$

f is contin in $[1,2]$ $\Rightarrow$ f assumes any value between $f(1) = -2$ and $f(2) = 4$ including 0.

$\Rightarrow f(c) = c^3 - c - 2 = 0$, $c \in [1,2]$