Q. 2.36 CONT

Now Prove L passes pumping Lemma

$s = a^i b^j c^k d^m$ with $i \neq 2$ and $i+j+k+m \geq 2$

Case 1. Let $u = v = x = \epsilon$, y is the first symbol and z is the remainder. Symbols $u v^n x y^n z$ will either be ($i = 0$ or $i = 1$ and $n = 0$) or more than one a followed by $\leq$ strings in form $b^j c^k d^m$, so this case passes pumping Lemma.

Case 2.
$s = a^i b^j c^k d^m \in L$ for some $j, k, m \geq 0$
$|s| \geq 2$ Let $u = v = x = \epsilon$, $y = a^i$ and
$z = b^j c^k d^m$
$x y^i z = a^{i+2(i-1)} b^j c^k d^m \in L$

Both cases hold, therefore
L acts context free in the pumping lemma