REMARKS FOR 2007 EXAM

Question 1

In that year the definition of a 'variety' was different from what we have this year. So in parts (b), (c) and (e), you should understand (every occurence of) the word 'variety' as 'algebraic set'.

Question 2

In part (b), you can assume both V and W are projective varieties; i.e. irreducible projective algebraic sets. And the word 'dominating' should be understood as 'dominant'. In part (c), you can skip the second question, since we didn't define the notion of rationality for affine varieties. You can skip parts (d) and (e) for the same reason.

Question 3

There is a typo in the solution to part (f). To find the points at infinity, we set $z = 0$ and get $x^4 + x^2y^2 = 0$, which implies $x = 0$ or $x = \pm\sqrt{-1}y$ (or equivalently, $y = \pm\sqrt{-1}x$). So the points at infinity are $[0 : 1 : 0]$ and $[1 : \pm\sqrt{-1} : 0]$.

Question 4

Although it is a very good question, we will not have any question of this kind in the exam this year.