Genetic Parameters were estimated for test day milk yield, fat yield, protein yield and ln(scc) for x Holstein Friesian cows with x,y,z,a,b records in parities 1,2,3,4 and 5 respectively. Parity 1,2,3 were treated as separate traits and parities 4,5 were treated as repeated records of parity 3. A random regression animal model was fitted using mix99 software. A fixed lactation curve was fitted using linear, quadratic and wilmink polynomial terms within calving season * parity. Similarly linear, quadratic and wilmink polynomials were used to fit random animal, permanent environment and herd effect. Heritability ranged between 0.12 to 0.27 for milk yield, between 0.10 and 0.21 for protein yield, between 0.11 and 0.20 for fat yield and between 0.10 and 0.26 for ln(scc).