Evaluate each limit:

a) $\lim\limits_{x \to 3} \dfrac{x^2-9}{x-3}$

b) $\lim\limits_{x \to 2} \dfrac{\sqrt{x+2}-2}{x-2}$

c) $\lim\limits_{x \to \infty} \dfrac{x-3}{x^2-9}$

d) $\lim\limits_{x \to \infty} \dfrac{x^2-9}{x-3}$

The L'Hôpital Controversy
(quick summary from various sources)

Johann Bernoulli met Guillame de l'Hôpital in Paris 1691 after giving a lecture on differential Calculus in Geneva. L'Hôpital hired Bernoulli to teach him Leibniz's newly published Calculus methods. Bernoulli and l'Hôpital signed a contract which gave l'Hôpital the right to use Bernoulli's discoveries as he pleased and Bernoulli received half a professor's salary for his work and tutoring.

L'Hôpital authored the first textbook on infinitesimal calculus, in 1696, which mainly consisted of the work of Bernoulli, including what is now known as L'Hôpital's rule. L'Hôpital acknowledged Bernoulli in the preface of his book.

After l'Hôpital's death in 1704, Bernoulli protested strongly that he was the author of l'Hôpital's calculus book. Proof that the work was due to Bernoulli was not obtained until 1922 when a copy of Johann Bernoulli's course made by his nephew Nicolaus(I) Bernoulli was found in Basel.