Solution to Huygen’s Third Exercise\footnote{Prepared by Richard Pulskamp, Department of Mathematics and Computer Science, Xavier University, Cincinnati, Ohio. This document created February 1, 2009.}

Let $C(n, k)$ denote the binomial coefficient “$n$ choose $k$.” The probability that 4 distinct suits are represented in the four cards drawn is clearly

$$\frac{C(10, 1)^4}{C(40, 4)} = \frac{10000}{91390}.$$ 

Therefore the part of the one is to the other as 1000 to 8139.