1014-11-1120 **James Mc Laughlin*** (`jmclaughl@wcupa.edu`), Mathematics Department, 124 Anderson Hall, West Chester University, West Chester, PA 19383, and **Douglas Bowman** and **Nancy J Wyshinski**. *A q-continued fraction and some new proofs of some old continued fraction identities.*

We find the limit of a continued fraction with several free parameters and then specialize the parameters to give new proofs of some old continued fraction identities, including the Rogers-Ramanujan identities,

$$\sum_{n=0}^{\infty} \frac{q^{n^2}}{(q;q)_n} = \frac{1}{(q;q^5)_\infty (q^4;q^5)_\infty},$$

and

$$\sum_{n=0}^{\infty} \frac{q^{n^2+n}}{(q;q)_n} = \frac{1}{(q^2;q^5)_\infty (q^3;q^5)_\infty};$$

Ramanujan's continued fraction expansion for $(q^2;q^3)_\infty/(q;q^3)_\infty$, namely,

$$\frac{(q^2;q^3)_\infty}{(q;q^3)_\infty} = \frac{1}{1+}\,\frac{-q}{1+q+}\,\frac{-q^3}{1+q^2+}\cdots\frac{-q^{2n-1}}{1+q^n+}\cdots;$$

and Ramanujan's continued fraction expansion for $(q;q^2)_\infty/(q^3;q^6)^3_\infty$,

$$\frac{(q;q^2)_\infty}{(q^3;q^6)^3_\infty} = \frac{1}{1+}\,\frac{q+q^2}{1+}\,\frac{q^2+q^4}{1+}\cdots\frac{q^n+q^{2n}}{1+}\cdots.$$

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