1125-11-2265   **Vanessa Arcelia Aguirre*** (`aguirre7@hawaii.edu`) and **Seneca Cox** (`senecac@hawaii.edu`).
Factorizations, elasticity, and Frobenius numbers of numerical monoids generated by a double arithmetic sequence.

Much is known about numerical monoids with two generators as well as those with generators forming an interval or an arithmetic sequence. When the generators are not of these forms, numerical monoids exhibit more complicated behavior. We introduce a monoid generated by a double arithmetic sequence or the numerical monoid $< a, b, a + s, b + s >$, and we assume that $s \mid a$ and $a < b$. We give a general expression for the Frobenius number of these numerical monoids and provide a proof for when $b = a + 1$ and $s \geq a/s$. In this case, the Frobenius number for monoids generated by a double arithmetic sequence is equal to the Frobenius number of $< b, s >$, the monoid generated by b and s. In addition, we compare the elasticity of elements in $< a, b >$ with those in a monoid generated by a double arithmetic sequence $< a, b, a + s, b + s >$. While it is known that the overall elasticity of the monoid generated double arithmetic sequence is larger than that of the monoid $< a, b >$, we explore their differences in elasticity element-wise. (Received September 20, 2016)

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