Show all work for full credit.

1. (5 points) Find the vertex of the graph of

\[ f(x) = (1 - x)(2x + 4). \]

2. (5 points) Suppose \( s(x) = ax^2 + b. \) If

\[ \frac{s(x + h) - s(x)}{h} = 12x + 6h, \]

then what is \( a \) equal to?