9. (10 pts.) Solve

\[ 2 \log x = \log 2 + \log (3x - 4) \]

\[ 2 \log x - \log 2 - \log (3x - 4) = 0 \]

\[ \log x^2 - \log 2 - \log (3x - 4) = 0 \]

\[ \log \frac{x^2}{2(3x - 4)} = 0 \]

\[ \frac{x^2}{2(3x - 4)} = 10^0 = 1 \]

\[ x^2 = 2(3x - 4) \]

\[ x^2 = 6x - 8 \]

\[ x^2 - 6x + 8 = 0 \]

\[ (x - 4)(x - 2) = 0 \]

\[ x = 4, 2 \]