February’s Problem

Question:
If \( f(2x) = \frac{2}{2+x} \) for all \( x>0 \), what is \( 2f(x) \)?

Solution:
Since we are given the value of \( f \) at twice a number, we must express \( f(x) \) as \( f(2\cdot\frac{x}{2}) \):

\[
2f(x) = 2f(2\cdot\frac{x}{2}) = 2\cdot\frac{2}{2+\frac{x}{2}} = 2\cdot\frac{4}{4+x}
\]

So, \( 2f(x) = \frac{8}{4+x} \).

Congratulations!!!

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