

Solution to exercise 5.2.2.

A series of one-step reductions suffices for the truth of the claim.

$$\begin{aligned} \text{BW}(\text{B}(\text{CB})\text{M})(\text{BW}(\text{B}(\text{CB})\text{M}))x &\triangleright_1 \text{W}(\text{B}(\text{CB})\text{M}(\text{BW}(\text{B}(\text{CB})\text{M})))x \\ &\triangleright_1 \text{B}(\text{CB})\text{M}(\text{BW}(\text{B}(\text{CB})\text{M}))xx \\ &\triangleright_1 \text{CB}(\text{M}(\text{BW}(\text{B}(\text{CB})\text{M})))xx \\ &\triangleright_1 \text{B}x(\text{M}(\text{BW}(\text{B}(\text{CB})\text{M})))x \\ &\triangleright_1 x(\text{M}(\text{BW}(\text{B}(\text{CB})\text{M})))x \\ &\triangleright_1 x(\text{BW}(\text{B}(\text{CB})\text{M})(\text{BW}(\text{B}(\text{CB})\text{M})))x \end{aligned}$$