

$$\begin{aligned}\sqrt{3x}(3\sqrt{6x} + \sqrt{5x}) &= 3\sqrt{3x} \cdot \sqrt{6x} + \sqrt{3x} \cdot \sqrt{5x} = \\ &3\sqrt{18x^2} + \sqrt{15x^2} \\ &= 3 \cdot \sqrt{9} \cdot \sqrt{2} \cdot \sqrt{x^2} + \sqrt{15} \cdot \sqrt{x^2} = 3 \cdot 3 \cdot |x| \cdot \sqrt{2} + \\ &\sqrt{15} \cdot |x| = 9|x|\sqrt{2} + |x|\sqrt{15}\end{aligned}$$