

Correct. Use FOIL and simplify:

$$(\sqrt{a} + 4)(2\sqrt{a} - 3) = (\sqrt{a})(2\sqrt{a}) - (\sqrt{a})(3) + (4)(2\sqrt{a}) - (4)(3)$$

$$= 2\sqrt{a^2} - 3\sqrt{a} + 8\sqrt{a} - 12 = 2|a| + 5\sqrt{a} - 12$$