THE DISTRIBUTIVE LAW

Expand and simplify the expressions in this exercise.

1 $\sqrt{5}\left(\sqrt{2}+\sqrt{3}\right)$ **2** $\sqrt{5}\left(\sqrt{5}+\sqrt{2}\right)$ **3** $\sqrt{2}\left(\sqrt{2}+\sqrt{8}\right)$

4 $\sqrt{3}\left(\sqrt{2}-\sqrt{6}\right)$ **5** $\sqrt{6}\left(\sqrt{3}-2\right)$ **6** $7\left(2\sqrt{5}-1\right)$

8 $3\sqrt{2}\left(2\sqrt{6}-\sqrt{5}\right)$ **9** $\sqrt{a}\left(\sqrt{a}+\sqrt{b}\right)$ **10** $\sqrt{x}\left(\sqrt{x}-\sqrt{y}\right)$

14 $\left(\sqrt{5}+2\right)\left(2\sqrt{5}+3\right)$ **15** $\left(2\sqrt{3}-5\right)\left(2\sqrt{3}+3\right)$ **16** $\left(\sqrt{3}-\sqrt{2}\left(2\sqrt{3}-\sqrt{2}\right)\right)$

20 $\left(\sqrt{5}-\sqrt{2}\right)^2$ **21** $\left(2\sqrt{6}+\sqrt{3}\right)^2$ **22** $\left(2\sqrt{2}-1\right)\left(2\sqrt{2}+1\right)$

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23 $(2\sqrt{6}-\sqrt{3})(2\sqrt{6}+\sqrt{3})$ **24** $(\sqrt{11}-\sqrt{7})(\sqrt{11}+\sqrt{7})$ **25** $(\sqrt{7}-2)(\sqrt{7}+2)$

30 $(\sqrt{11}-\sqrt{10})(\sqrt{11}+\sqrt{10})$ **31** $(\sqrt{6}-\sqrt{5})(\sqrt{6}+\sqrt{5})$ **32** $(2\sqrt{2}+\sqrt{3})^2$

36 Expand and simplify $(4\sqrt{3}+1)(2\sqrt{3}-3)$. Some steps in this simplification are given below. Indicate whether each statement is a correct or incorrect step.

(a) $72-12\sqrt{3}+2\sqrt{3}-3$ **(b)** $24-12\sqrt{3}+2\sqrt{3}-3$ **(c)** $21-10\sqrt{3}$ **(d)** $27-10\sqrt{3}$

37 $(5\sqrt{2}-4)(5\sqrt{2}+4)$ **38** $(2\sqrt{7}+3\sqrt{6})^2$ **39** $(2\sqrt{15}+\sqrt{5})(\sqrt{15}-3\sqrt{5})$