

Perform the indicated operations and express your answer in simplest radical form.

1)  $4(\sqrt{6}-\sqrt{2})-3(\sqrt{2}-\sqrt{6})$

2)  $\sqrt{x}(\sqrt{x}-\sqrt{y})$

3)  $5\sqrt{2}(7\sqrt{3}-6\sqrt{2})$

4)  $2\sqrt{5}(\sqrt{3}-\sqrt{5})+2(\sqrt{10}-3)$

5)  $(\sqrt{7}-2)(\sqrt{5}+3)$

6)  $(\sqrt{2}+\sqrt{5})^2$

7)  $(\sqrt{a}+5)^2$

8)  $(\sqrt{a+5})^2$

9)  $(\sqrt{a}-2)^2-(\sqrt{a-2})^2$

10)  $(\sqrt[3]{4}+\sqrt[3]{5})(\sqrt[3]{16}-\sqrt[3]{20}+\sqrt[3]{25})$

11)  $\frac{2\sqrt{27}+6\sqrt{5}}{3}$

12)  $\frac{2\sqrt{12}+5\sqrt{8}}{12}$

13)  $\frac{1}{2-\sqrt{3}}$

14)  $\frac{15}{\sqrt{6}-1}$

15)  $\frac{3}{\sqrt{x}-\sqrt{2}}$

16)  $\frac{\sqrt{x}}{\sqrt{x}+\sqrt{y}}$

17)  $\frac{4\sqrt{3}+\sqrt{5}}{3\sqrt{5}}$

18)  $\frac{\sqrt{x}+\sqrt{y}}{\sqrt{x}-\sqrt{y}}$

19)  $\frac{2\sqrt{7}+3\sqrt{2}}{3\sqrt{7}+2\sqrt{2}}$

20)  $\frac{x^2-3x-4}{\sqrt{x}+2}$

1)  $7\sqrt{6}-7\sqrt{2}$  2)  $x-\sqrt{xy}$  3)  $35\sqrt{6}-60$  4)  $2\sqrt{15}+2\sqrt{10}-16$  5)  $\sqrt{35}+3\sqrt{7}-2\sqrt{5}-6$

6)  $7+2\sqrt{10}$  7)  $a+10\sqrt{a}+25$  8)  $a+5$  9)  $6-4\sqrt{a}$  10) 9 11)  $2\sqrt{3}+2\sqrt{5}$

12)  $\frac{2\sqrt{3}+5\sqrt{2}}{6}$  13)  $2+\sqrt{3}$  14)  $3\sqrt{6}+3$  15)  $\frac{3\sqrt{x}+3\sqrt{2}}{x-2}$  16)  $\frac{x-\sqrt{xy}}{x-y}$  17)  $\frac{4\sqrt{15}+5}{15}$

18)  $\frac{x+2\sqrt{xy}+y}{x-y}$  19)  $\frac{6+\sqrt{14}}{11}$  20)  $x\sqrt{x}-2x+\sqrt{x}-2$