

Adding and Subtracting Radical Expressions

Simplify.

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

$-\sqrt{6}$

2) $-3\sqrt{7} + 4\sqrt{7}$

$\sqrt{7}$

3) $-11\sqrt{21} - 11\sqrt{21}$

$-22\sqrt{21}$

4) $-9\sqrt{15} + 10\sqrt{15}$

$\sqrt{15}$

5) $-10\sqrt{7} + 12\sqrt{7}$

$2\sqrt{7}$

6) $-3\sqrt{17} - 4\sqrt{17}$

$-7\sqrt{17}$

7) $-10\sqrt{11} - 11\sqrt{11}$

$-21\sqrt{11}$

8) $-2\sqrt{3} + 3\sqrt{27}$

$7\sqrt{3}$

9) $2\sqrt{6} - 2\sqrt{24}$

$-2\sqrt{6}$

10) $2\sqrt{6} + 3\sqrt{54}$

$11\sqrt{6}$

11) $-\sqrt{12} + 3\sqrt{3}$

$\sqrt{3}$

12) $3\sqrt{3} - \sqrt{27}$

0

13) $3\sqrt{8} + 3\sqrt{2}$

$9\sqrt{2}$

14) $-3\sqrt{6} + 3\sqrt{6}$

0

$$15) -3\sqrt{20} - \sqrt{5}$$
$$-7\sqrt{5}$$

$$16) 2\sqrt{45} - 2\sqrt{5}$$
$$4\sqrt{5}$$

$$17) 3\sqrt{18} - 2\sqrt{2}$$
$$7\sqrt{2}$$

$$18) -3\sqrt{18} + 3\sqrt{8} - \sqrt{24}$$
$$-3\sqrt{2} - 2\sqrt{6}$$

$$19) 3\sqrt{18} + 3\sqrt{12} + 2\sqrt{27}$$
$$9\sqrt{2} + 12\sqrt{3}$$

$$20) -3\sqrt{5} - \sqrt{6} - \sqrt{5}$$
$$-4\sqrt{5} - \sqrt{6}$$

$$21) -3\sqrt{2} + 3\sqrt{20} - 3\sqrt{8}$$
$$-9\sqrt{2} + 6\sqrt{5}$$

$$22) -3\sqrt{3} - \sqrt{8} - 3\sqrt{3}$$
$$-6\sqrt{3} - 2\sqrt{2}$$

$$23) -2\sqrt{20} + 2\sqrt{18} - 2\sqrt{5}$$
$$-6\sqrt{5} + 6\sqrt{2}$$

$$24) 2\sqrt{18} - 2\sqrt{12} + 2\sqrt{18}$$
$$12\sqrt{2} - 4\sqrt{3}$$

$$25) -\sqrt{45} + 2\sqrt{5} - \sqrt{20} - 2\sqrt{6}$$
$$-3\sqrt{5} - 2\sqrt{6}$$

$$26) 2\sqrt{20} - \sqrt{20} + 3\sqrt{20} - 2\sqrt{45}$$
$$2\sqrt{5}$$

$$27) -3\sqrt{45} + 2\sqrt{12} + 3\sqrt{6} - 3\sqrt{20}$$
$$-15\sqrt{5} + 4\sqrt{3} + 3\sqrt{6}$$

$$28) -\sqrt{27} - 3\sqrt{45} - \sqrt{20} + 2\sqrt{45}$$
$$-3\sqrt{3} - 5\sqrt{5}$$