

Day 8 - Adding and Subtracting Radicals - Practice

Simplify:

1. $6\sqrt{6} - 2\sqrt{6}$

$4\sqrt{6}$

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

$\sqrt{7}$

3. $-10\sqrt{5} + 12\sqrt{5}$

$2\sqrt{5}$

4. $2\sqrt{6} - 2\sqrt{24}$

$2\sqrt{6} - 2\sqrt{2 \cdot 2 \cdot 2 \cdot 3}$

$2\sqrt{6} - 2 \cdot 2\sqrt{6}$

$2\sqrt{6} - 4\sqrt{6}$

$\boxed{-2\sqrt{6}}$

5. $2\sqrt{6} + 3\sqrt{54}$

$2\sqrt{6} + 3\sqrt{2 \cdot 3 \cdot 3 \cdot 3}$

$2\sqrt{6} + 3 \cdot 3\sqrt{6}$

$2\sqrt{6} + 9\sqrt{6}$

$\boxed{11\sqrt{6}}$

6. $3\sqrt{8} + 3\sqrt{2}$

$3\sqrt{2 \cdot 2 \cdot 2} + 3\sqrt{2}$

$3 \cdot 2\sqrt{2} + 3\sqrt{2}$

$6\sqrt{2} + 3\sqrt{2}$

$\boxed{9\sqrt{2}}$

7. $3\sqrt{18} - 2\sqrt{2}$

$3\sqrt{2 \cdot 3 \cdot 3} - 2\sqrt{2}$

$3 \cdot 3\sqrt{2} - 2\sqrt{2}$

$9\sqrt{2} - 2\sqrt{2}$

$\boxed{7\sqrt{2}}$

8. $3\sqrt{5} + 3\sqrt{6} + 7\sqrt{5}$

$\boxed{10\sqrt{5} + 3\sqrt{6}}$

9. $-\sqrt{6} - 3\sqrt{6} - 2\sqrt{5}$

$\boxed{-4\sqrt{6} - 2\sqrt{5}}$

10. $\sqrt{3}(\sqrt{3} + 4)$

$$\sqrt{9} + 4\sqrt{3}$$

$$\boxed{3 + 4\sqrt{3}}$$

11. $\sqrt{2}(3\sqrt{14} - \sqrt{7})$

$$3\sqrt{28} - \sqrt{14}$$

$$3\sqrt{2 \cdot 2 \cdot 7} - \sqrt{14}$$

$$3 \cdot 2\sqrt{7} - \sqrt{14}$$

$$\boxed{6\sqrt{7} - \sqrt{14}}$$

12. $-4\sqrt{6}(3 + 5\sqrt{2})$

$$-12\sqrt{6} - 20\sqrt{12}$$

$$-12\sqrt{6} - 20\sqrt{2 \cdot 2 \cdot 3}$$

$$-12\sqrt{6} - 20 \cdot 2\sqrt{3}$$

$$\boxed{-12\sqrt{6} - 40\sqrt{3}}$$