

Radical Worksheet #1

Simplify

1. $\sqrt{1000}$

2. $\sqrt[3]{108}$

3. $\sqrt[4]{162}$

4. $-3\sqrt{5} + 2\sqrt{5}$

5. $\sqrt[3]{3} \cdot \sqrt[3]{-20}$

6. $\sqrt{2} \cdot 5\sqrt{10}$

7. $\sqrt[3]{3} \cdot \sqrt[3]{-9}$

8. $\frac{\sqrt{35}}{\sqrt{7}}$

9. $\frac{\sqrt[4]{42}}{\sqrt[4]{7}}$

10. $\sqrt{\frac{3}{5}}$

11. $4\sqrt{15}(\sqrt{6} + \sqrt{5})$

12. $\sqrt{\frac{11}{9}}$

$$13. \frac{\sqrt{3} + 3\sqrt{5}}{\sqrt{5}}$$

$$14. \frac{\sqrt[3]{9}}{\sqrt[3]{4}}$$

$$15. 3\sqrt{7} - 2\sqrt{28}$$

$$16. \frac{\sqrt{3}}{-1 - \sqrt{5}}$$

$$17. 7\sqrt[3]{2} + 6\sqrt[3]{250}$$

$$18. \frac{\sqrt{5}}{5 + \sqrt{2}}$$

$$19. \frac{4 + 3\sqrt{2}}{-3 - \sqrt{5}}$$

$$20. \frac{-4 + \sqrt{3}}{-1 - 2\sqrt{5}}$$

$$23. (6 - \sqrt{3})^2$$

$$24. (\sqrt{5} - \sqrt{6})(\sqrt{5} + \sqrt{2})$$

Radical Worksheet #1

Key

Simplify

1. $\sqrt{1000}$

$10\sqrt{10}$

2. $\sqrt[3]{108}$

$3\sqrt[3]{4}$

3. $\sqrt[4]{162}$

$3\sqrt[4]{2}$

4. $-3\sqrt{5} + 2\sqrt{5}$

$-\sqrt{5}$

5. $\sqrt[3]{3} \cdot \sqrt{-20}$

$-\sqrt[3]{60}$

6. $\sqrt{2} \cdot 5\sqrt{10}$

$10\sqrt{5}$

7. $\sqrt[3]{3} \cdot \sqrt[3]{-9}$

-3

8. $\frac{\sqrt{35}}{\sqrt{7}} \sqrt{5}$

9. $\frac{\sqrt[4]{42}}{\sqrt[4]{7}}$

$\sqrt[4]{6}$

10. $\sqrt{\frac{3}{5}}$

$\frac{\sqrt{15}}{5}$

11. $4\sqrt{15}(\sqrt{6} + \sqrt{5})$

$12\sqrt{10} + 20\sqrt{3}$

12. $\sqrt{\frac{11}{9}} \frac{\sqrt{11}}{3}$

$$13. \frac{\sqrt{3} + 3\sqrt{5}}{\sqrt{5}}$$

$$\frac{15 + \sqrt{15}}{5}$$

$$14. \frac{\sqrt[3]{9}}{\sqrt[3]{4}}$$

$$\frac{\sqrt[3]{18}}{2}$$

$$15. 3\sqrt{7} - 2\sqrt{28}$$

$$-\sqrt{7}$$

$$16. \frac{\sqrt{3}}{-1 - \sqrt{5}}$$

$$\frac{\sqrt{3} - \sqrt{15}}{4}$$

$$17. 7\sqrt[3]{2} + 6\sqrt[3]{250}$$

$$37\sqrt[3]{2}$$

$$18. \frac{\sqrt{5}}{5 + \sqrt{2}}$$

$$\frac{5\sqrt{5} - \sqrt{10}}{23}$$

$$19. \frac{4 + 3\sqrt{2}}{-3 - \sqrt{5}}$$

$$\frac{-12 + 4\sqrt{5} - 9\sqrt{2} + 3\sqrt{10}}{4}$$

$$20. \frac{-4 + \sqrt{3}}{-1 - 2\sqrt{5}}$$

$$\frac{-4 + 8\sqrt{5} + \sqrt{3} - 2\sqrt{15}}{19}$$

$$23. (6 - \sqrt{3})^2$$

$$39 - 12\sqrt{3}$$

$$24. (\sqrt{5} - \sqrt{6})(\sqrt{5} + \sqrt{2})$$

$$5 + \sqrt{10} - \sqrt{30} - 2\sqrt{3}$$