

Radicals

$$1. \sqrt{3a} \cdot \sqrt{5ab}$$

$$2. \frac{\sqrt{18x}}{\sqrt{3xy}}$$

$$3. \sqrt[3]{x^9 y^2}$$

$$4. \sqrt{3x^4 y^7}$$

$$5. \sqrt[3]{2x^2} \cdot \sqrt[3]{4x}$$

$$6. \sqrt{4x^5 y^2} \cdot \sqrt{16x^4 y^9}$$

$$7. \sqrt[4]{27} \cdot \sqrt{3}$$

$$8. \frac{\sqrt[3]{25}}{\sqrt{5}}$$

$$9. \frac{\sqrt{6}}{\sqrt[3]{9}}$$

$$10. \sqrt[4]{27a^2} \cdot \sqrt[4]{3a^3 b}$$

$$11. \sqrt[6]{72} \cdot \sqrt[3]{18}$$

$$12. \sqrt{2x} \cdot \sqrt[3]{4x^2 y} \cdot \sqrt[6]{16x^3 y}$$

$$13. \sqrt{10x} \cdot \sqrt[4]{40x^3}$$

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

$$15. (\sqrt[3]{4} - \sqrt[3]{9})^2$$

$$16. (3x^2 y^4)^{\frac{1}{2}}$$

$$17. (8x^4 y^9)^{\frac{3}{2}} (4xy)^{\frac{1}{2}}$$

$$18. \left(x^{\frac{1}{2}} + 2y^{\frac{1}{2}}\right) \left(x^{\frac{1}{2}} - 2y^{\frac{1}{2}}\right)$$

$$19. \sqrt[3]{x^9 y^2}$$

$$20. \sqrt{x^4 y^5} \cdot \sqrt[3]{x^7 y^9}$$

$$21. (8x^4 y^{-3})^{-\frac{1}{2}}$$

$$22. \sqrt{30x} \cdot \sqrt[4]{24x^2} \cdot \sqrt[3]{75x}$$

$$23. \sqrt{5xy} \cdot \sqrt[3]{100x^2}$$

$$24. \left(\sqrt[5]{\frac{16x^3}{24y^4}}\right)^2$$

$$25. \sqrt[4]{2\sqrt[3]{16x^3 y}}$$

$$26. \sqrt[3]{2x^3 y} \sqrt{8x^3 y^5}$$

$$27. \frac{\sqrt{2x} \cdot \sqrt[3]{4x^2 y^2}}{\sqrt[6]{16x^3 y^4}}$$

$$28. \frac{5x\sqrt{x}}{\sqrt[4]{50x^3 y^2} \cdot \sqrt[3]{20x^2 y}}$$

$$29. \frac{12x\sqrt[3]{4x^2}}{\sqrt{2x} \cdot \sqrt[6]{8x^4}}$$

$$30. \sqrt[3]{-5xy^2} \cdot \sqrt[3]{-75x^5 y}$$

$$31. \sqrt[3]{\frac{4x\sqrt{y^3}}{6x^2\sqrt{y}}}$$

$$32. \sqrt{\frac{\sqrt[3]{25x^2 y^3}}{\sqrt{5xy}}}$$

$$33. \sqrt[5]{\frac{25x^4 y^2}{\sqrt{625x^3 y^4}}}$$

$$34. \frac{\sqrt{5x^3 y^4} \cdot \sqrt[3]{25xy^{-3}}}{\sqrt[5]{125x^{-4} y^2}}$$

$$35. \frac{\sqrt[4]{x^5 y^7 z^{-3}} \cdot \left(\sqrt[3]{x^{-2} y^4}\right)^{-3} \cdot \sqrt[5]{y^{-5} z^{-10}}}{\sqrt[20]{x^{19} y^{-23}} \cdot \left(\sqrt[6]{x^{-5} y^2 z^{42}}\right)^2}$$