Laws of Exponents

Given: $\sqrt[n]{x} = x^{\frac{1}{n}}, \quad (\sqrt[n]{x})^m = x^{\frac{m}{n}}, \quad \sqrt[n]{x^m} = x^{\frac{m}{n}}, \quad \sqrt[n]{\frac{x}{y}} = \frac{x^{\frac{1}{n}}}{y^{\frac{1}{n}}}, \quad \left(\sqrt[n]{\frac{x^m}{y^p}}\right) = \frac{x^{\frac{m}{n}}}{y^{\frac{p}{n}}}$

Write each of the following radicals in simplified exponential form and simplified radical form

1. $\sqrt{x}$
2. $\sqrt{x^3}$
3. $\sqrt{xy}$
4. $\sqrt{x^3y^5}$
5. $\sqrt{x^{11}y^2}$
6. $\sqrt[3]{x}$
7. $\sqrt[4]{x^2y^5}$
8. $\sqrt[5]{x^5y^3z^{12}}$
9. $\sqrt{\frac{x}{y}}$
10. $\sqrt{\frac{x^3}{y^7}}$
11. $\sqrt[5]{\frac{x^5y^9}{z^7}}$
12. $\sqrt{x}\sqrt[3]{x}$
13. $\sqrt{xy^2}\sqrt[4]{x^3y^5}$
14. $\frac{\sqrt{x}}{\sqrt[3]{x}}$
15. $\frac{\sqrt{x^5}}{\sqrt[5]{x^2}}$
16. $\frac{\sqrt[3]{x^2y}}{\sqrt{x^3y^7}}$
17. $\left(\sqrt{x^3}\right)^5$
18. $\left(\sqrt{x^3y^5}\right)^4$
19. $\frac{\left(\sqrt{xy^3}\right)^5}{\left(\sqrt[3]{x^2y}\right)^2}$
20. $\left(\sqrt[3]{x^2y^3}\right)^5\left(\sqrt[4]{xy^5}\right)^2$
21. $\frac{\left(\sqrt{xy}\right)^3\left(\sqrt[3]{x^3y^2}\right)^2}{\sqrt[4]{x^4y^3}}$
22. $\sqrt[4]{\sqrt[3]{\sqrt{x^5y^7}}}$
23. $\sqrt[3]{\sqrt[4]{\sqrt{256x^{34}y^{29}}}}$
24. $\frac{\sqrt{12x^3y^5}\sqrt[4]{24x^{-5}y^3}}{\sqrt[3]{36x^4y^{-4}}}$