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#1, 3, 11-14, 17-28

1. a) $\sqrt[3]{x^2}$ b) $\sqrt{x^3}$ c) $\sqrt{\frac{5}{x}}$ d) $\sqrt[3]{6x^2}$

3. a) $x^{5/2}$ b) $y^{2/3}$ c) $(2a)^{5/6}$ d) x

11. $(8a^{-6})^{-2/3} = 8^{-2/3} a^{12/3} = \boxed{\frac{a^4}{4}}$

12. $(9n^{-5})^{-3/2} = 9^{-3/2} n^{15/2} = \boxed{\frac{n^{15/2}}{27}}$

13. $(4x^{-3})^{-1/2} \cdot 4x^{1/2} = 4^{-1/2} x^{3/2} \cdot 4x^{1/2} = \frac{1}{2} \cdot x^{4/2} \cdot 4 = \boxed{2x^2}$

14. $(4a^3)^{1/3} \div (4a^3)^{-2/3} = \frac{4^{1/3} a^1}{4^{-2/3} a^{-6/3}} = 4^{3/3} a^{9/3} = \boxed{4a^3}$

17. $a^{1/2} (a^{3/2} - 2a^{1/2}) = a^{4/2} - 2a^{2/2} = \boxed{a^2 - 2a}$

18. $2n^{1/3} (n^{2/3} + n^{-1/3}) = 2n^{3/3} + 2n^0 = \boxed{2n + 2}$

19. $x^{-1/2} (x^{5/2} - 2x^{3/2}) = x^{4/2} - 2x^{2/2} = \boxed{x^2 - 2x}$

$$20. \quad 2n^{-2/3} (n^{8/3} - 3n^{5/3}) = 2n^{6/3} - 6n^{3/3} = \boxed{2n^2 - 6n}$$

$$21. \quad \frac{x^{1/2} - 2x^{-1/2}}{x^{-1/2}} = \frac{x^{1/2}}{x^{-1/2}} - \frac{2x^{-1/2}}{x^{-1/2}} = x^{2/2} - 2x^0 = \boxed{x - 2}$$

$$22. \quad \frac{y^{-1/3} - 3y^{2/3}}{y^{-4/3}} = \frac{y^{-1/3}}{y^{-4/3}} - \frac{3y^{2/3}}{y^{-4/3}} = y^{3/3} - 3y^{6/3} = \boxed{y - 3y^2}$$

$$23. \quad \frac{2n^{1/3} - 4n^{-2/3}}{2n^{-2/3}} = \frac{2n^{1/3}}{2n^{-2/3}} - \frac{4n^{-2/3}}{2n^{-2/3}} = n^{3/3} - 2n^0 = \boxed{n - 2}$$

$$24. \quad \frac{x^{-1/2} (2x^{1/2} - x^{-1/2})}{x^{-1}} = \frac{2x^0 - x^{-2/2}}{x^{-1}} = \frac{2 - x^{-1}}{x^{-1}} = x(2 - x^{-1}) =$$

$$= 2x - x^0 = \boxed{2x - 1}$$

$$25. \quad \frac{2n^{1/3} (3n^{1/3} - 4n^{4/3})}{2n^{-1/3}} = \frac{6n^{2/3} - 8n^{5/3}}{2n^{-1/3}} = \frac{3n^{2/3} - 4n^{5/3}}{n^{-1/3}} =$$

$$= n^{1/3} (3n^{2/3} - 4n^{5/3}) = 3n^{3/3} - 4n^{6/3} = \boxed{3n - 4n^2}$$

$$26. \quad \frac{4ab^{-1/2} - 2ab^{1/2}}{(a^2b)^{-1/2}} = (a^2b)^{1/2} (4ab^{-1/2} - 2ab^{1/2}) =$$

$$= (ab^{1/2}) (4ab^{-1/2} - 2ab^{1/2}) = 4a^2b^0 - 2a^2b^{2/2}$$

$$= \boxed{4a^2 - 2a^2b}$$

$$27. \frac{(\sqrt[3]{4a})^2}{\sqrt[6]{4a}} = \frac{(4a)^{2/3}}{(4a)^{1/6}} = \frac{(4a)^{4/6}}{(4a)^{1/6}} = (4a)^{3/6} = (4a)^{1/2}$$
$$= 4^{1/2} a^{1/2} = \boxed{2\sqrt{a}}$$

$$28. \frac{(\sqrt{x})^5}{(\sqrt{x})^9} = \frac{(2x)^{5/2}}{(2x)^{9/2}} = (2x)^{-4/2} = (2x)^{-2} = \frac{1}{(2x)^2} = \frac{1}{2^2 x^2} = \boxed{\frac{1}{4x^2}}$$