DPP – 01 Solutions

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1. $(a^{1/7})^5 = (\sqrt[7]{a})^5$

2. $= \frac{1}{x^{3/2}} = \frac{1}{(x^{1/2})^3} = \frac{1}{(\sqrt{x})^3}$

3. $3x^{4/5} = 3(x^{1/5})^4 = 3(\sqrt[5]{x})^4$

4. $\frac{1}{x^{2/5}} \cdot \frac{3}{x^{1/2}} = \frac{1}{(x^{1/5})^2} \cdot \frac{3}{\sqrt{a}} = \frac{3}{(\sqrt[5]{x})^2 \cdot \sqrt{a}}$

5. $\frac{8}{m^2} \cdot \frac{1}{m^{2/3}} = \frac{8}{m^{8/3}} = \frac{8}{(m^{1/3})^8} = \frac{8}{(\sqrt[3]{m})^8}$

6. $\frac{1}{x^{4/5}} \div \frac{3}{a^{5/4}} = \frac{1}{(\sqrt[5]{x})^4} \times \frac{(\sqrt{a})^5}{3} = \frac{(4\sqrt{a})^5}{3 \cdot (\sqrt[5]{x})^4}$

7. $\frac{x^{-2/5}}{2x^{-1/2}} = \frac{x^{1/2}}{2x^{2/5}} = \frac{x^{\frac{1}{2}-\frac{2}{5}}}{2} = \frac{x^{1/10}}{2} = \frac{1}{2}(\sqrt[10]{x})$

8. $\frac{x^{1/5}}{(x^{-a})^{1/5}} = \left(\frac{x^1}{x^{-a}}\right)^{\frac{1}{5}} = (x^{a+1})^{1/5} = 5\sqrt{x^{a+1}}$

9. $(a^{-5})^{1/2m} \cdot (a^8)^{1/m}$

$(a^{-5})^{1/2m} \cdot (a^{16})^{1/2m}$

$(a^{-5} \cdot a^{16})^{1/2m}$

$(a^{11})^{1/2m} = 2^m\sqrt{a^{11}}$

10. $\frac{(x^6)^{1/4a}}{(x^{-5})^{1/2a}} = \frac{(x^6)^{1/4a}}{(x^{-10})^{1/4a}} = \left(\frac{x^6}{x^{-10}}\right)^{1/4a} = (x^{16})^{\frac{1}{4a}} = (x^4)^{1/a} = \sqrt[a]{x^4}$

11. $(x^{1/3})^7 = x^{7/3}$

12. $(a^{1/4})^{-6} = a^{-6/4} = a^{-3/2} = \frac{1}{a^{3/2}}$

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

14. $\frac{1}{(a^{1/5})^{-2}} = \frac{1}{a^{-2/5}} = a^{2/5}$

15. $\frac{x^{4/3}}{x^{-1/6}} = x^{\frac{4}{3}+\frac{1}{6}} = x^{9/6} = x^{3/2}$

16. $\frac{a^{-3/4}}{a^{-1/8}} = a^{\frac{1}{8}-\frac{3}{4}} = a^{-5/8} = \frac{1}{a^{5/8}}$

17. $(2^2)^{-3/2} = 2^{-3} = \frac{1}{2^3} = \frac{1}{8}$

18. $(2^3)^{2/3} = 2^2 = 4$

19. $(3^2)^{3/2} = 3^3 = 27$

20. $(2^4)^{5/4} = 2^5 = 32$

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21. $(3^4)^{-3/4} = 3^{-3} = \frac{1}{3^3} = \frac{1}{27}$

22. $= 6^2 = 36$

23. $(5^x)^{-2/3} = 5^{-2} = \frac{1}{5^2} = \frac{1}{25}$

24. $= \left(\frac{1}{3^3}\right)^{-4/3} = (3^{-3})^{-4/3} = 3^4 = 81$

25. $\left(\frac{1}{6^3}\right)^{-2/3} = (6^{-3})^{-2/3} = 6^2 = 36$

26. $\frac{x^{m+2n+3m-8n}}{x^{5m-6n}} = \frac{x^{4m-6n}}{x^{5m-6n}} = x^{(4m-6n)-(5m-6n)} = x^{-m} = \frac{1}{x^m}$