

8.6

1) $m^{\frac{3}{5}} = (\sqrt[5]{m})^3$

3) $(7x)^{\frac{3}{2}} = (\sqrt{7x})^3$

5) $\frac{1}{(\sqrt{6x})^3} = (6x)^{-\frac{3}{2}}$

7) $\frac{1}{(\sqrt[4]{n})^7} = n^{-\frac{7}{4}}$

9) $8^{\frac{2}{3}} = (\sqrt[3]{8})^2 = 2^2 = 4$

11) $4^{\frac{3}{2}} = (\sqrt{4})^3 = 2^3 = 8$

13) $yx^{\frac{1}{3}} \cdot xy^{\frac{3}{2}}$
 $y^{\frac{2}{2}}x^{\frac{1}{3}}x^{\frac{3}{3}}y^{\frac{3}{2}}$
 $x^{\frac{4}{3}}y^{\frac{5}{2}}$

15) $(a^{\frac{1}{2}}b^{\frac{1}{2}})^{-1}$
 $a^{-\frac{1}{2}}b^{-\frac{1}{2}}$
 $\frac{1}{a^{\frac{1}{2}}b^{\frac{1}{2}}}$

17) $\frac{a^2b^0}{3a^4} = \frac{1}{3a^2}$

19) $uv \cdot u \left(v^{\frac{3}{2}}\right)^3$
 $uv \cdot uv^{\frac{9}{2}}$
 $uv^2uv^{\frac{9}{2}}$
 $u^2v^{\frac{11}{2}}$

21) $(x^0y^{\frac{1}{3}})^{\frac{3}{2}} x^0$
 $y^{\frac{1}{2}}$

23) $\frac{a^{\frac{3}{4}}b^{-1}b^{\frac{7}{4}}}{3b^{-1}} = \frac{a^{\frac{3}{4}}b^{\frac{7}{4}}}{3}$

25) $\frac{3y^{-\frac{5}{4}}}{y^{-1}2y^{-\frac{1}{3}}} = \frac{3yy^{\frac{3}{4}}}{2y^{\frac{4}{3}}} = \frac{3y^{\frac{3}{4}+\frac{1}{4}}}{2y^{\frac{4}{3}}} = \frac{3y^1}{2y^{\frac{4}{3}}} = \frac{3y^{\frac{16}{15}}}{2y^{\frac{16}{15}}} =$
 $\frac{3y^{\frac{1}{15}}}{2}$

27) $\left(\frac{m^{\frac{3}{2}}n^{-2}}{(mn^{\frac{4}{3}})^{-1}}\right)^{\frac{7}{4}} = \left(\frac{m^{\frac{3}{2}}n^{-2}}{m^{-1}n^{-\frac{4}{3}}}\right)^{\frac{7}{4}} =$

$\left(\frac{m^{\frac{3}{2}}m^1n^{\frac{4}{3}}}{n^2}\right)^{\frac{7}{4}} = \left(\frac{m^{\frac{3}{2}+2}n^{\frac{4}{3}}}{n^2}\right)^{\frac{7}{4}} = \left(\frac{m^{\frac{7}{2}}}{n^{\frac{2}{3}}}\right)^{\frac{7}{4}} =$
 $\frac{m^{\frac{35}{8}}}{n^{\frac{7}{6}}}$

29) $\frac{(m^2n^{\frac{1}{2}})^0}{n^{\frac{3}{4}}} = \frac{1}{n^{\frac{3}{4}}}$

31) $\frac{(x^{-\frac{4}{3}}y^{-\frac{1}{3}})^{-1}}{x^{\frac{1}{3}}y^{-2}} = \frac{(x^{-\frac{4}{3}}y^{-\frac{1}{3}})^{-1}}{x^{\frac{1}{3}}y^{-2}} =$

$\frac{(x^{\frac{4}{3}}y^{\frac{2}{3}})^{-1}}{x^{\frac{1}{3}}y^{-2}} = \frac{x^{\frac{4}{3}}y^{-\frac{2}{3}}}{x^{\frac{1}{3}}y^{-2}} = \frac{x^{\frac{4}{3}-\frac{1}{3}}y^{-\frac{2}{3}+2}}{x^{\frac{1}{3}-\frac{1}{3}}y^{-2+\frac{4}{3}}} = \frac{x^1y^{\frac{4}{3}}}{x^0y^{\frac{2}{3}}} = xy^{\frac{4}{3}}$

33) $\frac{(uv^2)^{\frac{1}{2}}}{v^{-\frac{1}{4}}v^2} = \frac{u^{\frac{1}{2}}v}{v^{-\frac{1}{4}}v^2} = \frac{u^{\frac{1}{2}}v^{\frac{1}{4}}v}{v^2} = \frac{u^{\frac{1}{2}}v^{\frac{5}{4}}}{v^2} =$
 $\frac{u^{\frac{1}{2}}v^{\frac{5}{4}}}{v^2} = \frac{u^{\frac{1}{2}}v^{\frac{5}{4}}}{v^{\frac{8}{4}}} = \frac{u^{\frac{1}{2}}}{v^{\frac{3}{4}}}$