(1) $\frac{\sqrt[4]{4}}{2\sqrt[4]{8}} = \frac{1}{2\sqrt[4]{2}} \cdot \frac{\sqrt[4]{8}}{\sqrt[4]{8}} = \boxed{\frac{\sqrt[4]{8}}{4}}$

(2) $\frac{\sqrt[5]{-8}}{\sqrt[5]{2500}} = \frac{\sqrt[5]{-1}}{\sqrt[5]{625}} \cdot \frac{\sqrt[5]{5}}{\sqrt[5]{5}} = \boxed{\frac{-\sqrt[5]{10}}{5}}$

(3) $4u^{-2}v^{2} \cdot 3u^{\frac{2}{3}}v^{-2}$

$12u^{-\frac{4}{3}+\frac{2}{3}}v^{2+-2}$

$12u^{-\frac{4}{3}}v^{0}$

$\frac{12}{u^{4/3}} = \frac{12}{\sqrt[3]{u^4}} \cdot \frac{\sqrt[3]{u^2}}{\sqrt[3]{u^2}} = \boxed{\frac{12\sqrt[3]{u^2}}{u^2}}$

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

$8x^{-2}y^{2} = \boxed{\frac{8y^2}{x^2}}$

(5) $2u^{\frac{5}{3}}v^{\frac{3}{2}} \cdot 4v^{-4}$

$8u^{\frac{5}{3}}v^{\frac{3}{2}+\frac{-8}{2}}$

$8u^{\frac{5}{3}}v^{-\frac{5}{2}}$

$\frac{8u^{\frac{5}{3}}}{v^{\frac{5}{2}}} \cdot \frac{v^{\frac{1}{2}}}{v^{\frac{1}{2}}} = \frac{8u^{\frac{10}{6}}v^{\frac{3}{6}}}{v^3} = \frac{8\sqrt[6]{u^{10}v^3}}{v^3} = \boxed{\frac{8u\sqrt[6]{u^4v^3}}{v^3}}$

(6) $(x^{\frac{3}{2}}y^{\frac{1}{2}})^2 = \boxed{x^3y}$

(7) $(u^{-\frac{1}{2}}v^{-3})^2 = u^{-1}v^{-6} = \boxed{\frac{1}{uv^6}}$

(8) $(u^{\frac{3}{2}}v^{\frac{3}{2}})^{\frac{5}{4}} = u^{\frac{15}{8}}v^{\frac{15}{8}}$

$\sqrt[8]{u^{15}v^{15}} = uv\sqrt[8]{u^7v^7}$

(9) $(yx^{\frac{3}{2}})^{-2} = y^{-2}x^{-3} = \boxed{\frac{1}{y^2x^3}}$

(10) $\frac{xy}{y^{2/3}} = xy^{\frac{1}{3}} = \boxed{x\sqrt[3]{y}}$

(11) $\frac{2a^{-\frac{5}{3}}b^{-\frac{1}{4}}}{a^{-1/2}} = 2a^{-\frac{5}{3}-\frac{1}{2}}b^{-\frac{1}{4}} = 2a^{-\frac{10}{6}+\frac{3}{6}}b^{-\frac{1}{4}} = 2a^{-\frac{7}{6}}b^{-\frac{1}{4}} = \frac{2}{a^{\frac{7}{6}}b^{\frac{1}{4}}} = \frac{2}{a^{\frac{14}{12}}b^{\frac{3}{12}}}$

$= \frac{2}{\sqrt[12]{a^{14}b^3}} \cdot \frac{\sqrt[12]{a^{10}b^9}}{\sqrt[12]{a^{10}b^9}} = \boxed{\frac{2\sqrt[12]{a^{10}b^9}}{a^2b}}$