$\sqrt[4]{9x^5y^2}\cdot\sqrt[4]{9x^5y^4}\cdot\sqrt[4]{x^2y^2}=\sqrt[4]{9x^5y^2\cdot 9x^5y^4\cdot x^2y^2}=\sqrt[4]{81x^{5+5+2}y^{2+4+2}}$

$=\sqrt[4]{81x^{12}y^8}=\sqrt[4]{3^4(x^3)^4(y^2)^4}=\sqrt[4]{3^4}\cdot\sqrt[4]{(x^3)^4}\cdot\sqrt[4]{(y^2)^4}=3x^3y^2$