(1) [5 points] Solve and state your answer using interval notation:

$$|2x-1| \leq 1$$

$$-1 \leq 2x-1 \leq 1$$

$$0 \leq 2x \leq 2$$

$$0 \leq x \leq 1$$

$$\therefore \quad [0,1]$$

(2) [5 points] Rationalize the denominator:

$$\frac{\sqrt{3}}{5-\sqrt{2}} \cdot \frac{5+\sqrt{2}}{5+\sqrt{2}}$$

$$= \frac{5\sqrt{3}+\sqrt{6}}{25-2}$$

$$= \frac{5\sqrt{3}+\sqrt{6}}{23}$$

(3) [**5 points**] Simplify and state your answer using only positive exponents:

$$\frac{(16x^2y^{-1/3})^{3/4}}{(xy^2)^{1/4}}$$

$$= \frac{16^{3/4}(x^2)^{3/4}(y^{-1/3})^{3/4}}{x^{1/4}(y^2)^{1/4}}$$

$$= \frac{(16^{1/4})^3 x^{\frac{6}{4}} y^{-\frac{3}{12}}}{x^{1/4} y^{2/4}}$$

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

$$= \frac{8 x^{\frac{3}{2}-\frac{1}{4}}}{y^{\frac{1}{2}+\frac{1}{4}}}$$

$$= \frac{8 x^{\frac{5}{4}}}{y^{\frac{3}{4}}}$$