

P4

68. a. 
$$\left( \frac{X^8 Y^4}{16 Y^{\frac{4}{3}}} \right)^{-\frac{1}{4}} = \frac{X^{-2} Y}{16^{\frac{1}{4}} Y^{-\frac{1}{3}}} = \frac{16^{\frac{1}{4}} Y Y^{\frac{1}{3}}}{X^2} = \frac{2 Y^{\frac{4}{3}}}{X^2}$$

3pts

3pts b. 
$$\left( \frac{-8 Y^{\frac{3}{4}}}{Y^3 Z^6} \right)^{-\frac{1}{3}} = \frac{(-8)^{\frac{1}{3}} Y^{-\frac{1}{4}}}{Y^{-1} Z^{-2}} = \frac{Y^{\frac{3}{4}} Z^2}{(-8)^{\frac{1}{3}} Y^{\frac{1}{4}}} = \boxed{\frac{Y^{\frac{3}{4}} Z^2}{-2} = -\frac{1}{2} Y^{\frac{3}{4}} Z^2}$$

80. 
$$\sqrt[3]{\frac{54 X^2 Y^4}{2 X^5 Y}} = \left( \frac{27 X^2 Y^4}{X^5 Y} \right)^{\frac{1}{3}} = \frac{(27)^{\frac{1}{3}} X^{\frac{2}{3}} Y^{\frac{4}{3}}}{X^{\frac{5}{3}} Y^{\frac{1}{3}}} = \frac{3 Y}{X}$$

3pts