Bellwork Monday, February 10, 2014

Rationalize each denominator.

1. $\frac{9x}{\sqrt{12x^3y}} \cdot \frac{\sqrt{3xy}}{\sqrt{3xy}} = \frac{9x\sqrt{3xy}}{\sqrt{36x^4y^2}}$

$= \frac{9x\sqrt{3xy}}{6x^2y}$

$= \frac{3\sqrt{3xy}}{2xy}$

2. $\frac{\sqrt{6a^{13}b^4}}{\sqrt{5a^7b^9}} \cdot \frac{\sqrt{5ab}}{\sqrt{5ab}} = \frac{\sqrt{30a^{14}b^5}}{\sqrt{5^2a^8b^{10}}}$

$= \frac{a^7b^2\sqrt{30b}}{5a^4b^5}$

$= \frac{a^3\sqrt{30b}}{5b^3}$

3. $\frac{5Q}{\sqrt[3]{10P^{16}Q^2}} \cdot \frac{\sqrt[3]{10^2p^2Q}}{\sqrt[3]{10^2p^2Q}} = \frac{5Q\sqrt[3]{100p^2Q}}{\sqrt[3]{10^3p^{18}Q^3}}$

$= \frac{5Q\sqrt[3]{100p^2Q}}{10p^6Q}$

$= \frac{\sqrt[3]{100p^2Q}}{2p^6}$

4. $\dfrac{4c^3d}{\sqrt[6]{2c^7d^{15}}} \cdot \dfrac{\sqrt[6]{2^5c^5d^3}}{\sqrt[6]{2^5c^5d^3}} = \dfrac{4c^3d\sqrt[6]{2^5c^5d^3}}{\sqrt[6]{2^6c^{12}d^{18}}}$

$= \dfrac{4c^3d\sqrt[6]{2^5c^5d^3}}{2c^2d^3}$

$= \dfrac{2c\sqrt[6]{32c^5d^3}}{d^2}$

5. $\dfrac{\sqrt{2}-8\sqrt{6}}{\sqrt{6}} \cdot \dfrac{\sqrt{6}}{\sqrt{6}} = \dfrac{\sqrt{12}-8\cdot 6}{6}$

$= \dfrac{2\sqrt{3}-48}{6}$

$= \dfrac{\sqrt{3}-24}{3}$