

MAT 104 Quiz 25  
Monday, November 29, 2004

1. Simplify

$$\sqrt[2]{12}$$

$$\sqrt[2]{12} = \sqrt[2]{2^2 \cdot 3} = 2\sqrt{3}$$

2. Simplify

$$\sqrt[4]{81x^{12}y^7}$$

$$\sqrt[4]{3^4 x^{12} y^7} = 3x^3 y \sqrt[4]{y^3}$$

3. Simplify

$$\frac{\sqrt[3]{81}}{\sqrt[3]{3}}$$

$$\frac{\sqrt[3]{81}}{\sqrt[3]{3}} = \sqrt[3]{\frac{81}{3}} = \sqrt[3]{27} = 3$$

4. Simplify

$$\sqrt[3]{\frac{64a^5b^{12}}{27a^{14}b^5}}$$

$$\begin{aligned} \sqrt[3]{\frac{64a^5b^{12}}{27a^{14}b^5}} &= \sqrt[3]{\frac{2^6 b^7}{3^3 a^9}} \\ &= \frac{4b^2 \sqrt[3]{b}}{3a^2} \end{aligned}$$