

Key

Math 92

Quiz 4

Dividing Radical Expressions-7.4

1) Simplify by taking the roots of the numerator and the denominator. Assume all variables represent positive numbers

$$\sqrt[3]{\frac{27a^3}{8b^3}} = \frac{\sqrt[3]{27a^3}}{\sqrt[3]{8b^3}} = \frac{3a}{2b}$$

2) Divide and if possible simplify. Assume all variables represent positive numbers

$$\frac{\sqrt[3]{189x^5y^7}}{\sqrt[3]{7x^2y^4}} = \sqrt{\frac{189x^5y^7}{7x^2y^4}} = \sqrt{27x^3y^3}$$
$$= 3xy$$

3) Rationalize each denominator. Assume all variables represent positive numbers.

$$a) \sqrt{\frac{5}{7}} = \sqrt{\frac{5 \cdot 7}{7 \cdot 7}} = \sqrt{\frac{35}{49}} = \frac{\sqrt{35}}{7}$$

$$b) \frac{\sqrt[3]{7x}}{\sqrt[3]{25y^2}} = \frac{\sqrt[3]{7x}}{\sqrt[3]{5^2 y^2}} \cdot \frac{\sqrt[3]{5y}}{\sqrt[3]{5y}} = \frac{\sqrt[3]{35xy}}{\sqrt[3]{5^3 y^3}}$$

$$5^2 y^2 \quad \leftarrow \text{have}$$

$$\frac{5y}{\quad} \quad \leftarrow \text{need}$$

$$5^3 y^3 \quad \leftarrow \text{want}$$

$$= \frac{\sqrt[3]{35xy}}{5y}$$