

Xavier University of Louisiana

Study Guide for the Xavier Mathematics Placement Test

4. Rational exponents and radicals, rationalizing denominators

Practice Problems

Rewrite the following expressions in radical form:

1. $x^{3/4}$
2. $y^{1/2}$
3. $5a^{2/3}$
4. $(3t)^{1/2}$

Rewrite the following expressions using only positive exponents:

1. $\sqrt[3]{x}$
2. $\sqrt[5]{a^2}$
3. $\sqrt{5x}$

Simplify the following expressions:

1. $(3\sqrt{2} - 1)(\sqrt{2} + 3)$
2. $3\sqrt{8x^3} - 2x\sqrt{18xy}$
3. $3\sqrt{8x^3y} - 2x\sqrt{18xy}$

Rationalize the following fractions:

1. $\frac{2\sqrt{5}}{3\sqrt{2}}$
2. $\frac{1 + \sqrt{3}}{2 - \sqrt{3}}$