

MATH 162 Quiz 1 NAME:

1. Write the expressions without using the absolute value symbol, and simplify.
 - a. $|a - b|$ if $a > b$.
 - b. $|-x^2 - 1|$.
2. Simplify and rationalize the denominator when appropriate.
 - a. $(\frac{-8x^3}{y^{-6}})^{2/3}$.
 - b. $\frac{1}{\sqrt[3]{2}}$.

Solutions

1-(a) Since $a > b$, $a - b > 0$ so that $|a - b| = a - b$.

1-(b) Since $x^2 + 1 > 0$, $|-x^2 - 1| = |-(x^2 + 1)| = x^2 + 1$.

2-(a) $(\frac{-8x^3}{y^{-6}})^{2/3} = (-8x^3y^6)^{2/3} = (-8)^{2/3}(x^3)^{2/3}(y^6)^{2/3} = 4x^2y^4$.

2-(b) $\frac{1}{\sqrt[3]{2}} = \frac{1}{\sqrt[3]{2}} \frac{\sqrt[3]{2^2}}{\sqrt[3]{2^2}} = \frac{\sqrt[3]{4}}{2}$.