

Math 1513 - College Algebra

Quiz #4 - 2011.08.30

Solutions

1. How do we express solutions to linear inequalities? Give an example.

We can express solutions to linear inequalities in interval notation, set notation or as a graph. As an example of interval notation, we could have $x \in [-2, 3)$, which is given by $\{x \mid -2 \leq x < 3\}$ in set notation.

2. Simplify the expression $3x\sqrt[3]{54x} - 5\sqrt[3]{16x^4}$.

$$\begin{aligned}3x\sqrt[3]{54x} - 5\sqrt[3]{16x^4} &= 3x\sqrt[3]{2 \cdot 3^3 \cdot x} - 5\sqrt[3]{2^4 \cdot x^4} \\ &= 3x \cdot 3 \cdot \sqrt[3]{2x} - 5 \cdot 2x \cdot \sqrt[3]{2x} \\ &= 9x\sqrt[3]{2x} - 10x\sqrt[3]{2x} \\ &= -x\sqrt[3]{2x}\end{aligned}$$