Name: _____

College Algebra: Quiz #4 (Solutions)

1. Find all solutions of the following inequality.

$$2|2x+8|+10>30$$

Solution: First, solve for the absolute value expression by subtracting 10 from both sides and then dividing by 2.

$$|2x+8|>10.$$

This is an absolute value inequality of the form "absolute value greater than", so we can now rewrite as a compound inequality as follows.

$$2x+8>10 \quad \text{OR} \quad 2x+8<-10.$$

Solving each of these for x, we have

$$x<-9 \quad \text{OR} \quad 1<x.$$

In interval notation, the solution is $\boxed{(-\infty,-9)\cup(1,\infty)}$.