Quiz 1

Fall 2014 **Your name:** _____

Math 0230 **Your TA's name:** _____

No calculators, no notes, no books are permitted.

SHOW ALL WORK (no work = no credit). Write neatly. Simplify your answers.

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1. (a) [1 point]   Calculate $0.9 + \dfrac{1}{16}$

(b) [1 point]   Find exact value of $\dfrac{\sqrt{75} - \sqrt{48}}{3\sqrt{3}}$

2. (a) [1 point]   Simplify $\dfrac{3^{3\log_3 x}}{x^2}$

(b) [1 point]   Solve the inequality $x\,|x| > 4$

3. (a) [1 point]   Solve the equation. Find all solutions $\cos 3x = -\dfrac{1}{2}$

(b) [1 point]   Prove the identity $\cot^2 x - \cos^2 x = \cot^2 x \cos^2 x$

4. (a) [2 points] Find the limit $\lim\limits_{x \to -\infty} \left(\sqrt{x^2 + 4x} - \sqrt{x^2 + 2x} \right)$

(b) [2 points] Find $y'(0)$ if $x^2 + \cos y = xy^2$ and $0 \le y \le \pi$.