11am class   **Quiz 1**

Fall 2012   **Your name:**

Math 0220   **Your TA's name:**

No calculators, no notes, no books. Show all your work (no work = no credit). Write neatly. Simplify your answers.

1. Solve inequalities

(a) [5 points] $\tan t \geq \sqrt{3}$ on the interval $t \in (0, \pi/2)$.

(b) [5 points] $\quad \dfrac{x-1}{x+2} \le 0$

2. [5 points]   Find the surface area A of the cylinder with the radius $r = 2$ cm and the hight $h = 5$ cm.

3. Calculate

(a) [3 points] $101^2 - 99^2$

(b) [2 points] $\sin\left(\dfrac{5\pi}{6}\right)$

bonus problem [5 points extra] Calculate $\cos\left(\dfrac{\pi}{12}\right)$. Write the answer in a form of radicals. Hint: $\dfrac{\pi}{12} = \dfrac{\pi}{3} - \dfrac{\pi}{4} = \dfrac{\pi}{4} - \dfrac{\pi}{6}$.