Quiz Five

No notes. No calculators.

Simplify your answers. Show your work. Please put a box around YOUR FINAL ANSWER.

There are 15 points on this quiz. Please give exact answers.

1. (3 points) Find two solutions of the equation \( \cos(\pi x^2 - \pi x) = 0 \).

2. (6 points) Put the following in standard exponential form \( A(x) = A_0 b^x \).
   a. (3 points) \( y = 3(4)^{1-x} \)
   b. (3 points) \( y = 2(5)^{2x-1} \)
Once again, the TAs (Kelly, Hui, and Truman) are riding the ferris wheel at the fair.

Recall from quiz 4 that the ferris wheel has radius 75 feet, is rotating at 1 revolution every 2 minutes, and is moving counter-clockwise. The TAs start at the lowest point at $t = 0$. For the last quiz, we found that their position after $t$ minutes was given by the coordinates

$$(x, y) = (75 \cos(\pi t + 3\pi/2), 75 \sin(\pi t + 3\pi/2)).$$

3 (6 points) Find three times when the TAs are at the line $y = 75/2$, as in the picture.