

**KING FAHD UNIVERSITY OF PETROLUUM AND MINERALS**

**Faculty of Science, Prep-Year Math Program**

**Math 001 - Term 041**

**QUIZ #5 (2.1 and 2.2)**

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Name:

ID:

Sr. #:

Sec.:

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**Question1**

**(3 points)**

Given the equation of a circle  $2x^2 + 2y^2 + 8x - 20y + 40 = 0$

a) Write this equation in the **standard form**.

b) Find the **center** and the **radius** of this circle.

**Question2**

**(2 points)**

If  $f(x) = [x] - [-x]$ , then find  $f(\sqrt{15})$ .

**Question3**

Given  $F(x) = \begin{cases} 2 & \text{if } x \leq -1 \\ x^2 & \text{if } -1 < x \leq 1 \\ -x-1 & \text{if } 1 < x \leq 3 \end{cases}$

i. Sketch the graph of  $F(x)$

**(3 points)**

ii. Find the range of  $F(x)$

**(2 points)**