

King Fahd University of Petroleum and Minerals
Faculty of Science – Per-Year Math Program
Math 001 - Term 032
Recitation hour (2.2&2.3)

Please cover at least FOUR questions

Question1

Identify the equation or the set of ordered pairs (x, y) that defines y as a function of x .

- a) $\{(0,0), (1,1), (2,2)\}$
- b) $\{(2,1), (-1,3), (2,0), (-2,3)\}$
- c) $y^3 + x^2 = 1$
- d) $y^2 + x^3 = 1$

Question2

Find the domain of $f(x) = \sqrt{x - x^2}$

Question3

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

- i. Sketch the graph of $F(x)$
- ii. Determine
 - a. the domain
 - b. the range
 - c. the x – and y – intercepts
 - d. the interval(s) over which $F(x)$ is increasing or Decreasing

Question4

If $f(x) = \begin{cases} x^2 - 1 & \text{if } x < 1 \\ [2x] & \text{if } x \geq 1 \end{cases}$, then find value of $f(\sqrt{2}) + f(-\sqrt{2})$.

Question5

Find the equation of the line passes through the point (3,7) and perpendicular to the line passing through the two points (0,1) and (-2,3).

Question6

Find the point of intersection between the two lines $2x + 3y - 1 = 0$ and $3y - 2x - 4 = 0$.