

ICNS100 Intensive Mathematics
Quiz 1 (10%)

out of 20 points

Name: _____ Student ID _____

1. Consider the graph of the equation

$$y^3 = x - x^3.$$

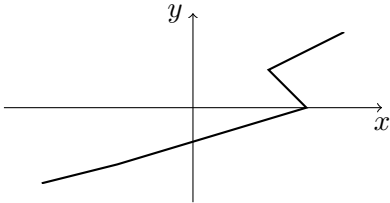
- (a) The graph is symmetric about (tick or cross) (4 points)
 the x -axis the y -axis the origin the line $y = x$.

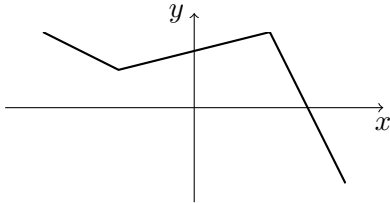
(b) Find the x -intercepts. (1 point)

(c) Find the y -intercepts. (1 point)

2. Find the slope and y -intercept of a straight line given by $-x = -5y + 1$. (2 points)

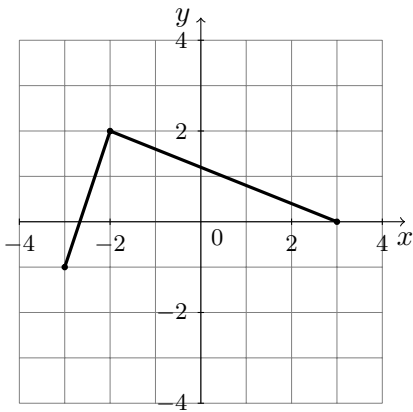
3. For each of the following graphs, determine whether it is a graph of a function or one-to-one function. (4 points)

(a) 
Function (yes/no)?
One-to-one function (yes/no)?

(b) 
Function (yes/no)?
One-to-one function (yes/no)?

4. The line L is given by the equation $2y - 4 = 5x + 1$. The line K is given by the equation $2x + 5y - 10 = 0$. Determine whether the lines L and K are parallel, perpendicular, or neither. Justify your answer. (3 points)

5. A function $y = f(x)$ has the following graph (2 points)



Draw (on the same picture) the graphs of

(a) $y = f(x) - 3$

(b) $y = f(-x) + 1$

Label your answers with (a) and (b) accordingly.

6. Sketch the graph of the following case-defined function (3 points)

$$f(x) = \begin{cases} 3 & , x < -2 \\ 1 - x & , -2 \leq x < 0 \\ -1 & , 0 \leq x \leq 4. \end{cases}$$

