ACMAT117 Fall 2024
Professor Manguba-Glover
Section 1.3 Classwork (CW 2) Name: _____

Complete as many of the following problems as you can with your group. You do not have to go in order. Each group will be given a specific problem that they must complete and present to either Professor MG or to Stefanie before they leave.

If **your entire table** finishes early, and you have presented your given problem, you may leave early.

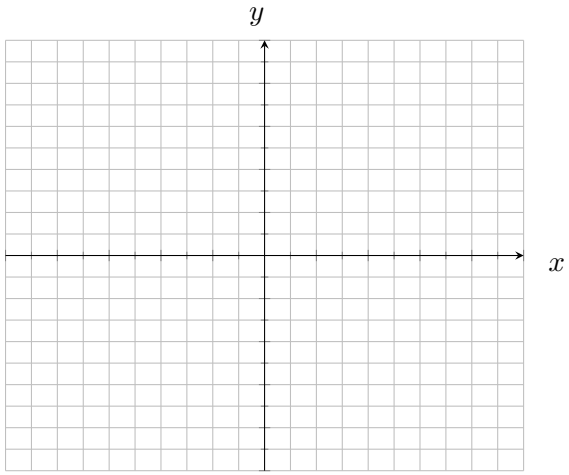
(1) Write each verbal function representation in its symbolic representation. Then simplify the expression. Let x represent the number:

   (a) y is six more than the product of negative four and a number

   (b) Divide a number by 6 then add 5 to produce y

   (c) y is equal to 3 less than a number multiplied by itself

(2) Sketch the graph of $y = 5 - x^2$ by making a table of values that include $x = -3, -2, -1, 0, 1, 2, 3$



(3) Determine if each set of ordered pairs represents a function:

   (a) $A = \{(-2, 3), (-1, 2), (-0, -3), (-2, 4)\}$

   (b) $B = \{(1, 4), (2, 5), (-3, -4), (-1, 7), (0, 4)\}$

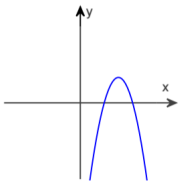
(4) Let $f(x) = \frac{x}{x-1}$

   (a) If possible, evaluate $f(2)$, $f(1)$, and $f(x + 1)$

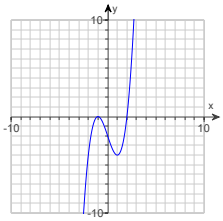
   (b) Find the domain of f in set notation and in interval notation.

(5) Use the vertical line test to determine if y is a function of x in the graph.

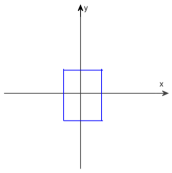
(a)



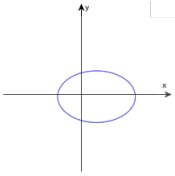
(b)



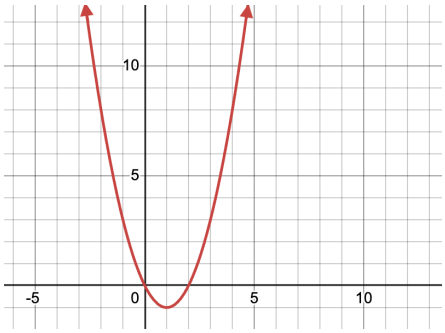
(c)



(d)



(6) Let $g(x) = x^2 - 2x$, whose graph is given below



(a) Find the domain and range of g using interval notation.

(b) Evaluate $g(-1)$ using the formula for $g(x)$. Check your answer using the graph.

(7) If $f(x) = -4x^2 + 3x - 2$, find the following

(a) $f(2)$

(b) $f(-1)$

(c) $f(x-2)$

Key:

(1) (a) $y = -4x + 6$

(b) $y = \frac{x}{6} + 5$

(c) $y = x^2 - 3$

(2) Use a graphing utility to check

(3) A is not a function, B is a function

(4) (a) $f(2) = 2$, $f(1)$ is undefined, $f(x+1) = \frac{x+1}{x}$

(b) $\{x|x \neq 1\}$, $(-\infty, 1) \cup (1, \infty)$

(5) a and b are functions, c and d are not

(6) (a) D: $(-\infty, \infty)$, R: $[-1.\infty)$

(b) $g(-1) = 3$

(7) (a) -12

(b) -9

(c) $-4x^2 + 19x - 24$