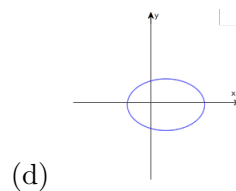
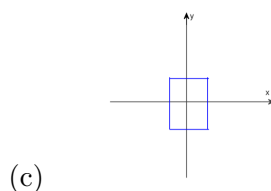
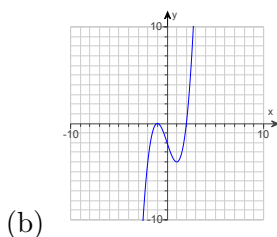
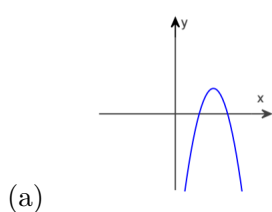


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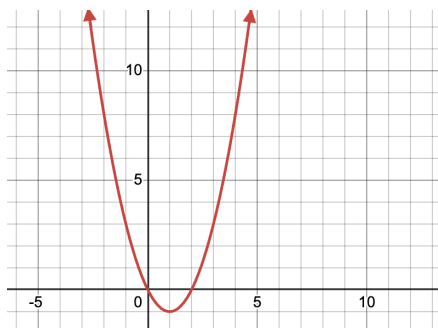
Complete as many of the following problems as you can with your group. You do not have to go in order. Each group will be specific problems that they must complete and present to either Professor MG or to the Math Fellow before they leave.

If **your entire table** finishes early, and you have presented your given problems, 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.



(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) $f(2)$

(c) $f(x - 2)$

(b) $f(-1)$

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