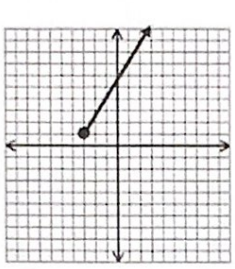
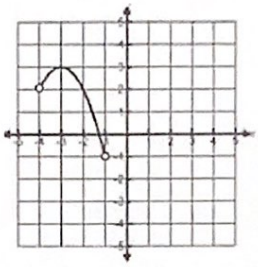
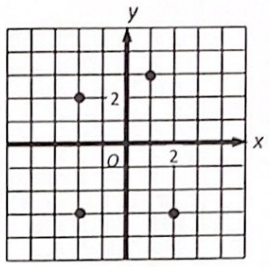
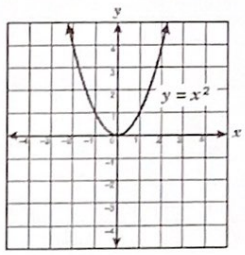
Module 1 Review Algebra II Pre-AP

1. Be able to look at a graph and determine the domain, range, and end behavior, if any. (Interval form)









Domain: $[-3, \infty)$ $(-4, -1)$ $x = -2, 1, 2$ $(-\infty, \infty)$

Range: $[1, \infty)$ $(-1, 3]$ $y = -3, 2, 3$ $[0, \infty)$

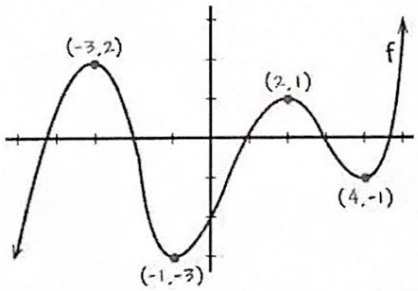
End Behavior: as $x \to \infty$, $y \to \infty$ none none as $x \to \infty$, $y \to \infty$ as $x \to -\infty$, $y \to \infty$

2. Be able to write an interval in set notation, and also as an equality. Do this for the domain and range of the last two graphs above.

Inequality: $\varnothing$ $-\infty < x < \infty$ $0 \le y < \infty$

Set Notation: $\{x \mid x = -2, 1, 2\}$ $\{y \mid y = -3, 2, 3\}$ $\{x \mid -\infty < x < \infty\}$ $\{y \mid 0 \le y < \infty\}$

3. Be able to look at a given graph and state the characteristics in different intervals, including zeroes and relative max/min.



interval(s) in which the function is:

increasing/decreasing Incr: $(-\infty, -3) \cup (-1, 2) \cup (4, \infty)$ Decr: $(2, -1) \cup (1, 4)$

positive/negative pos: only $(-4.2, -2) \cup (-.9, 3) \cup (4.7, \infty)$

Relative max/min Rel max @ $x = -3$ & $x = 2$; Rel. min @ $x = -1$ & $x = 4$

Domain/Range/End Behavior $(-\infty, \infty)$; $(-\infty, \infty)$ as $x \to \infty$, $y \to \infty$; as $x \to -\infty$, $y \to -\infty$

Intercepts x-ints at: $x = -4.2, -2, .9, 3$ y-int @ $(0, -2)$

Average value (Average Rate)

4. Transformations (Refer to HW#7)

In addition to being able to perform a transformation, be able to describe the transformation(s)

example: $-2f(x+1)-3$

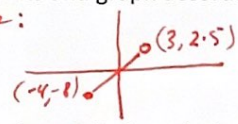
Horizontal shift of 1 to the left, vertical shift of 3 down, vertical stretch, and reflection across the x-axis.

5. Be able to graph in any given domain, pay attention to the endpoints and graph accordingly.

$(-4, -8)$ $(3, 2.5)$

$f(x) = \frac{3}{2}x - 2$ *in* $[-4, 3)$ or in $f(x) = \frac{3}{2}x - 2$ *in* $(-\infty, 1)$

1st one:



Range: $[-8, 2.5)$

6. Be able to determine whether or not a function / one to one function. Calculate the inverse, show that two functions are inverses by applying the composite property, graph them, and be able to list properties between and function and its inverse. (Refer to HW# 10)