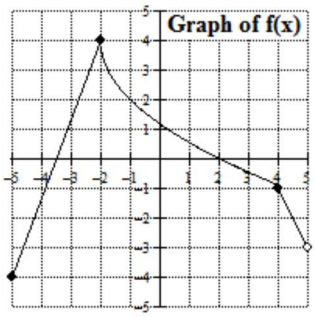
Free Response Practice #9
Calculator NOT Permitted

The graph of a function, $f(x)$, is pictured below. A table of values is also given of a function, $g(x)$, whose graph is formed by connecting the points in the table with straight line segments. Use the information to answer the questions that follow.



x	$g(x)$
−4	2
−2	−1
0	−3
2	−1
4	2

a. Find the value of $[-2 \cdot f(-5) - g(f(2))]$. Show your work.

$= -2 \cdot (-4) - g(0)$
$= 8 - (-3)$ ×2
$= 11$

b. Is $g(x)$ an even function, an odd function, or neither even nor odd? Give a numerical reason for your answer.

$g(x)$ is even b/c for every point (x, y) there is a point $(-x, y)$ +1 +1

c. If $p(x) = ax^2 - 3x + 10$, for what value(s) of a is $p(-2) = f(g(-2))$? Show your work.

$a(-2)^2 - 3(-2) + 10 = f(-1)$ +1
$4a + 6 + 10 = 2$ +1
$4a + 16 = 2$
$4a = -14$
$a = \frac{-14}{4}$ +1
$a = -7/2$

d. Identify the interval(s) along the x axis for which $f(x) < 0$. Give a reason for your answer.

when $f(x) < 0$, $f(x)$ is below the x-axis. +1
$\therefore f < 0$ on $[-5, -3.5) \cup (2, 5)$ +1