

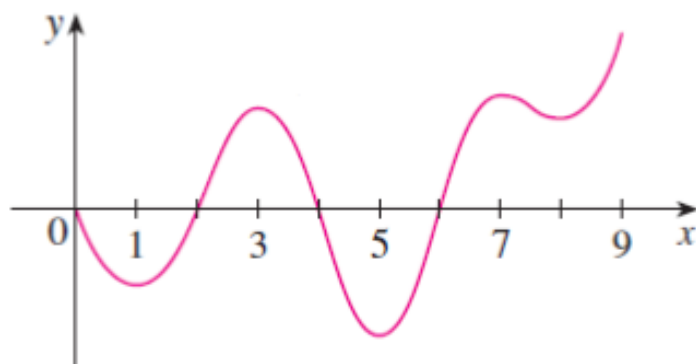
Math 141 – Unit 2 Quiz-

Score: ____ / ____

Name: _____

To receive full credit, clear and correct work as discussed in videos must be shown for each problem unless otherwise indicated. Only answers to applications should be given as decimals, and these answers should be correctly rounded to at least two decimal places when reasonable. Units should always be included with answers. Any variable used when solving applications should be clearly defined.

- The graph of the function $h(x)$ is shown below. Use it to answer each of the following questions.



- For what value(s) of x is h increasing? _____
 - For what value(s) of x is h concave down? _____
 - Label all local maxima with an M.
 - Label all inflection points with IP.
- If the following list gives the transformations that were applied to f to get the graph of g , find the values of A, B, C, D in the statement $g(x) = A \cdot f(B(x + C)) + D$

The graph of g is:

Shifted up 9 units,

$A =$ _____

Shifted right 5 units, and

$B =$ _____

Vertically compressed by a factor of 2.

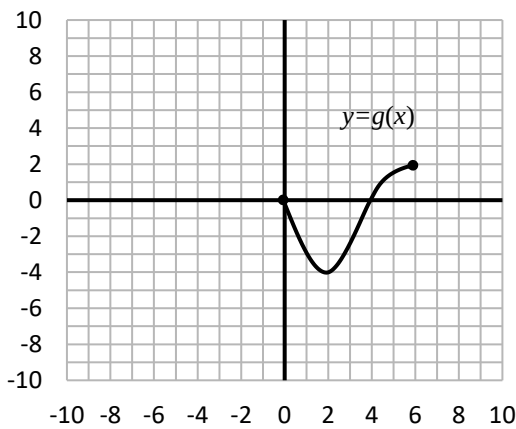
$C =$ _____

Flipped over the y axis

$D =$ _____

Horizontally compressed by a factor of 4

3. The graph of g is shown below. **USE THIS GRAPH FOR THIS ENTIRE PAGE.**



a) $g(2) =$ _____

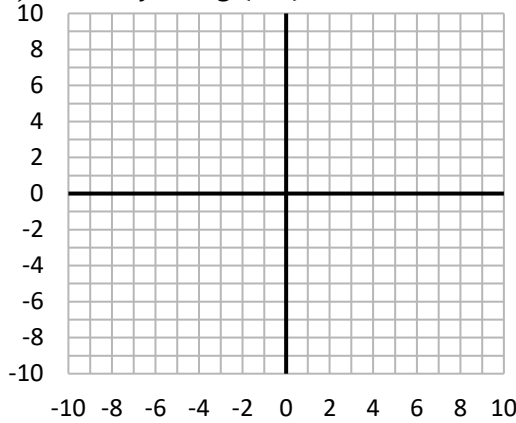
b) Solve: $g(x) = -3$ if _____

c) Solve: $g(x) < 0$ if _____

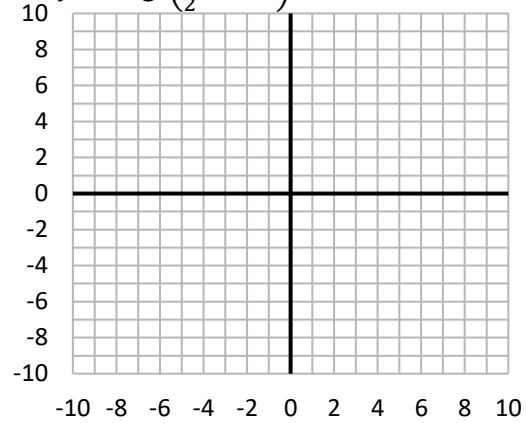
d) Find the AROC of g on $[1, 3]$ _____

e) What is the domain of g ? _____

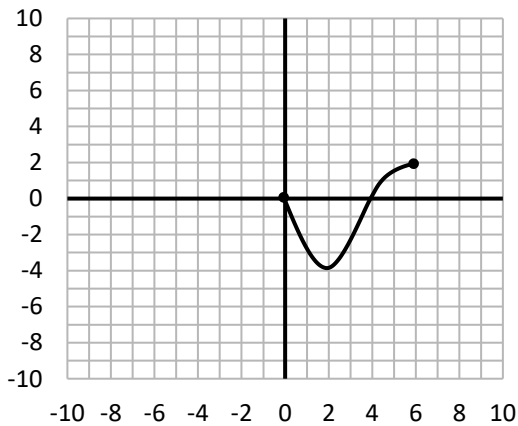
f) Sketch $y = 3g(-x) + 4$



g) Sketch $y = -g\left(\frac{1}{2}x + 2\right)$

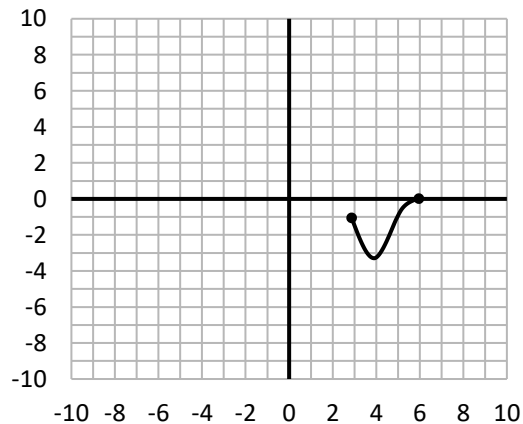


g) Add to the graph of g to create a new function that is odd.



h) List the transformations that must be applied to the graph of g (in order) to get the graph shown below.

List steps here:



4. Sketch the graph of the piecewise function $y = h(x)$ on the grid.

$$h(x) = \begin{cases} \frac{1}{x^2} & , \quad x < -1 \\ x^3 & , \quad -1 \leq x \leq 1 \\ \sqrt[3]{x} & , \quad x > 1 \end{cases}$$

