11. [11 points] A portion of the graph of a function $g$ is shown below.

In each of parts a. – d. on this page, the corresponding portion of the graph of a function obtained from $g$ by one or more transformations is shown, together with a list of possible formulas for that function. In each case, circle the one correct formula for the function shown.

a. [2 points]

$y = U(x)$

$U(x) =$?

Circle the one correct choice below.

- $g(x) - 1$
- $g(0.5x)$
- $0.5g(x)$
- $g(x) + 1$
- $g(2x)$
- $2g(x)$
- $g(x) - 1.5$
- $g(x + 1)$
- $g(x - 1)$

b. [2 points]

$y = M(x)$

$M(x) =$?

Circle the one correct choice below.

- $g(x) - 1$
- $g(0.5x)$
- $0.5g(x)$
- $g(x) + 1$
- $g(2x)$
- $2g(x)$
- $g(x) - 1.5$
- $g(x + 1)$
- $g(x - 1)$

c. [2 points]

$y = A(x)$

$A(x) =$?

Circle the one correct choice below.

- $g(2x) + 1$
- $g(0.5x) + 1$
- $g(x - 2) - 1$
- $g(2x) - 1$
- $g(0.5x) - 1$
- $2g(x - 1)$
- $2g(x + 1)$
- $0.5g(x + 1)$
- $0.5g(x - 1)$

d. [2 points]

$y = R(x)$

$R(x) =$?

Circle the one correct choice below.

- $g(-x - 1) + 2$
- $-g(x - 1) - 2$
- $-g(x + 2) - 1$
- $g(-x + 1) - 2$
- $-g(-x - 2) - 1$
- $-g(x - 2) + 1$
- $g(-x - 2) + 1$
- $-g(-x + 2) + 1$
- $-g(-x + 1) + 2$

e. [3 points] A portion of the graph of the derivative of one of the five functions above is shown on the right. Which derivative is shown? Circle the one correct choice below.

- $g'(x)$
- $U'(x)$
- $M'(x)$
- $A'(x)$
- $R'(x)$